




**Verification and certification report form for  
CDM programme of activities  
(Version 04.0)**

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

**BASIC INFORMATION**

<b>Title and UNFCCC reference number of the programme of activities (PoA)</b>	Improved cook stoves and sustainable charcoal initiative UNFCCC PoA reference number: 10516		
<b>Version number(s) of the PoA-DD(s) to which this report applies</b>	Version 6.0		
<b>Version number of the verification and certification report</b>	04		
<b>Completion date of the verification and certification report</b>	07/04/2021		
<b>Monitoring period number and duration of this monitoring period</b>	First Monitoring Period 26/06/2020 - 31/08/2020 (including both the days)		
<b>Number and version number of the monitoring report to which this report applies</b>	Monitoring report number 1, Version 5		
<b>Coordinating/managing entity (CME)</b>	Nature Club of Rajasthan		
<b>Host Parties</b>	<b>Host Parties of the PoA</b>	<b>Is this a host Party to a CPA covered in this report? (yes/no)</b>	
	India	Yes	
<b>Applied methodologies and standardized baselines</b>	AMS-II.G, version 10, "Energy efficiency measures in thermal applications of non-renewable biomass" AMS-III.BG, version 03, "Emission reduction through sustainable charcoal production and consumption" AMS-I.E, version 09: "Switch from non-renewable biomass for thermal applications by the user"		
<b>Mandatory sectoral scopes</b>	3: Energy demand 5: Chemical industries 1: Energy industries (renewable - / non-renewable sources)		
<b>Conditional sectoral scopes, if applicable</b>	Not applicable		
<b>Estimated amount of GHG emission reductions or GHG removals for this monitoring period in the included CPAs covered in this report</b>	55,883 tCO <sub>2</sub> e		
<b>Certified amount of GHG emission reductions or GHG removals for this monitoring period for the included CPAs covered in this report</b>	<b>Amount before 1 January 2013</b>	<b>Amount from 1 January 2013 until 31 December 2020</b>	<b>Amount from 1 January 2021</b>
	-	41,004 tCO <sub>2</sub> e	-

<b>Name and UNFCCC reference number of the DOE</b>	E-0052: Carbon Check (India) Private Ltd.
<b>Name, position and signature of the approver of the verification and certification report</b>	Amit Anand, CEO 

## SECTION A. Executive summary

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Introduction:

The Project Participant (atmosfair gGmbH) has appointed the DOE, Carbon Check (India) Private Ltd. (CC IPL) to perform an independent verification of the CDM Programme of Activities “Improved cook stoves and sustainable charcoal initiative” in India (hereafter referred to as “Programme of Activities or PoA”) for the CPA titled “Improved cook stoves and sustainable charcoal initiative, CPA 1” in West Bengal, India which is registered under this PoA (UNFCCC Ref no PoA 10516).

The PoA involves replacement of less efficient cooking stoves using woody biomass with improved cooking stoves (ICS) which are more efficient particularly micro wood gasifier stove, Top Lit Up-Draft (TLUD). The CPA is designed to generate emission reductions by distribution of energy efficient or improved stoves for household cooking purposes in India, the same micro wood gasifier stoves also produce charcoal. The ICS (TLUD gasifier cook stove) distributed under the CPA of the PoA are more efficient than the traditional cook stove. Moreover, the consumption of conventional charcoal, by traditional charcoal users, reduces by providing them charcoal generated in these ICSs. By replacing inefficient non-renewable biomass based traditional cookstoves, the PoA will save on consumption of woody biomass. Charcoal is the by-product in the ICS, which is sold to the charcoal users. The charcoal generated from these units will replace the charcoal produced by conventional method and thus avoid GHG emissions in the production process.

As stated in the MR /2/ and verified by document review and during the on-site visit interviews, Nature Club of Rajasthan is the CME and atmosfair gGmbH is the project participant and has sponsored the distribution of the ICS. Sapient Infotech is the manufacturer and distributor of the project stoves along with monitoring. Under the contract Sapient Infotech is also responsible for collection of the charcoal generated in these ICS and supply to the retailers who in-turn sell onward to small SMEs for replacement of charcoal produced by conventional method.

The CPAs are designed to generate emission reductions by distribution of the fuel-efficient wood based stoves. The fuel-efficient cook stoves are replacing the less efficient baseline stoves in common use (baseline scenario). The CME and CPA implementer are responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the component project activities.

This report summarises the findings of the verification of the project, performed on the basis of paragraph 62 of the CDM Modalities & Procedures, as well as 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 request for issuance of CERs. This report contains the findings and resolutions from the verification and a certification statement for the certified emission reductions.

Objective:

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 was to verify and certify emission reductions reported for the “Improved cook stoves and sustainable charcoal initiative” in the host country India for the period 26/06/2020 - 31/08/2020 (inclusive of both the dates).

The purpose of verification is to review the monitoring results and verify that the monitoring was implemented according to the monitoring methodologies and the monitoring plan in the PoA-DD /B04/ and the revised CPA-DD /15/ and used to confirm that the reductions in anthropogenic emissions by sources, are sufficient, definitive and presented in a concise and transparent manner. CCIPL's objective is to perform a thorough, independent assessment of the implementation of the registered PoA-DD /B04/ and revised CPA-DD /15/.

In particular, the monitoring plan, monitoring report and the project's compliance with relevant UNFCCC and 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/included CPA-DD and the approved monitoring methodologies, AMS-II.G (version 10) and AMS-III.BG (version 03.0) /B02/.

Scope:

The scope of the verification is:

- To verify the project implementation and operation with respect to the revised CPA-DD /15/
- To verify the implemented monitoring plan with the CPA-DD and applied baseline and monitoring methodology.
- To verify that the actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
- 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.
- To verify that 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.

The verification comprises a review of the monitoring report covering the monitoring period from 26/06/2020- 31/08/2020 and based on the revised CPA-DD including the monitoring plan, emission reduction calculation spreadsheet, monitoring methodology and all related evidence provided by project participant.

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

The verification team assigned by the DOE concludes that the PoA-DD (Version 6.0, dated 09/03/2020) /B04/, CPA: 10516-P1-0001-CP1 as described in the revised CPA-DD /15/ and the Monitoring report, Version 5, dated 06/04/2021 /2/, meet all relevant requirements of the UNFCCC for CDM project activities including 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 PoAs requirements Version 02.0 /B01-1/.

The component project activity was correctly implemented according to selected monitoring methodology, monitoring plan and the CPA-DD. 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 interviews, the verification team confirms that the PoA has resulted in the 41,004 tCO<sub>2</sub>e emission reductions during the first monitoring period.

CCIPL, 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 members**

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	Interview(s)	Verification findings
1.	Team Leader/Technical Expert/Local Assessor	IR	Agarwalla	Sanjay Kumar	CC IPL	X	X	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	Biswas	Subhendu	CC IPL
2	Approver	IR	Anand	Amit	CC IPL

**SECTION C. Application of materiality in conducting the verification****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	<i>All the input data in the ER spreadsheet including sales database, charcoal collection and sales records, determination of parameter for efficiency testing including data calculation. This includes all the parameters to be monitored ex-post as per the PoA-DD/CPA-DD /B04/.</i>	<i>The risk was mitigated by the training of the personnel involved in the data capture, calculation and those involved in the supervision of the stove sales database, charcoal collection and sales and WBT and by following the monitoring responsibilities. The training records were reviewed which were also confirmed during the on-site visit interviews. Verification team, based on the above, confirms that the risk is appropriately mitigated.</i>
2.	<i>Information System: Use of spreadsheets without adequate controls related to data changes/updates, version tracking, traceability, security</i>	Medium	<i>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 is</i>	<i>The identified risk was mitigated by managing access to the records. It was confirmed through interviews that the raw data is collected by the field personnel and then transmitted and stored electronically to the PP's office. The data quality control</i>

			<i>controlled.</i>	<i>is maintained by the PP.</i>
3.	<i>Accuracy of the measuring equipment</i>	<i>Low</i>	<i>Check the calibration records for the measurement equipment used for efficiency test.</i>	<i>The risk due to accuracy of the measuring equipment was ensured by planning to check calibration certificates of the measuring equipment used for stove efficiency (water boiling tests), the measuring instruments for weighing of the amount of charcoal produced in these units are also calibrated as per schedule.</i>
4.	<i>Competence of personnel involved in conducting standardized tests viz., WBT</i>	<i>Medium</i>	<i>Interview of the personnel involved and check the training records / accreditation certificates (applicable in case of institutions) involved in conducting such tests.</i>	<i>The risk was mitigated by reviewing the training records of the personnel involved in the conducting such tests and by following the monitoring responsibilities. The training records and certificates were reviewed which also confirmed during the interviews.</i>
5.	<i>Sample</i>	<i>Medium</i>	<i>Sample size is suitable and the surveyed households at the CPA level are random.</i>	<i>Cross-check the procedure to identify the sample size against the sampling guideline and standard and confirm the sample size is calculated correctly.</i>

## 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 /B08/ and § 308 of CDM VVS for PoAs, version 02.0 /B01-1/. It was concluded that the materiality threshold applicable to the project activity based on actual emission reductions achieved is 5% of 41,004 tCO<sub>2</sub>e which is equal to 2,050 tCO<sub>2</sub>e.

In planning the verification, verification team took cognizance of §11 and 12 of the “Guideline: Application of materiality in verifications” Version 02.0 /B08/. A materiality threshold of 2,050 tCO<sub>2</sub>e is determined in line with § 308 (d) of CDM VVS for PoAs, version 02.0.

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

1. Monitoring system including the data input procedure (including relevant personnel and applicable template forms used)
2. Copy of the sales/distribution agreement between household and PP (origin of data)
3. Charcoal collection agents (Agents responsible for collection and storage of charcoal produced) and sale to charcoal retailers/end-users
4. Stove unique ID system (marked on the distributed stoves)
5. ER sheet (application of data)
6. Data flow
7. Data control procedures
8. Monitoring survey records
9. Stove efficiency test (WBT) records

In conducting the verification, DOE took cognizance of § 13-17 of the “Guideline: Application of materiality in verifications” Version 02.0 /B08/ and based on the input of data from different sources checked through sampling of records during on-site interviews. Data flow was checked through comparison of data in hand-written forms /5/, electronic database /6/ and ER sheet /4/. The competence 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 by means of on-site interviews.

The risks identified can be 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 of the personnel assessing their competencies, skills, monitoring / testing procedure followed, understanding of the monitoring survey form / WBT protocol and testing procedure etc. and during the on-site interviews. Further, data was crosschecked with the ER calculation spreadsheet /4/ and the raw data.

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 personnel and then transmitted and stored electronically at CME's office. The data quality control is maintained by the CME/PP.

Accuracy of the measuring equipment: The risk due to inaccuracy in measurements was mitigated by reviewing calibration certificates of all the project equipment. The moisture meters are self-calibrating devices and conduct calibration during each measurement cycle.

Competence of personnel involved in conducting standardized tests viz., WBT: Verification team has reviewed the abilities, qualifications and recognition of involved personnel involved in the WBT. The WBT has been carried out by the well-trained personnel and training certificate of the personnel has been provided to the verification team in this respect /9/. The training content has also been provided to the verification team. The verification team based on on-site visit interviews and review of competency documents and training records /9/ confirms that the team was qualified to carry out the WBT in line with the protocol.

Mitigation due to error in Sampling: The verification team mitigated the risk by checking the ER sheet /4/, list of random samples /13/ generated for monitoring surveys and WBT and sample size calculation sheet /4/ and interviews with personnel responsible for the same.

In conducting the verification, DOE took cognizance of §13-17 of the "Guideline: Application of materiality in verifications" (version 02.0) /B08/ and based on the input of data from different sources checked through sampling of records during on-site visit interviews.

Based on the assessment carried out, CCIPL confirms with a reasonable level of assurance that the claimed emission reductions are free from material errors, omissions or misstatements.

## **SECTION D. Means of verification**

### **D.1. Desk/document review**

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The verification was performed primarily based on the review of the Monitoring report /1/ /2/ and the supporting documentation. This process included review of data and information presented to verify their completeness and review of the monitoring plan and monitoring methodologies /B02/. Documents reviewed or referenced during the verification are listed in Appendix 3 below.

**D.2. On-site**

Duration of on-site inspection: 24/11/2020				
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 PoA-DD, CPA-DD.	West Bengal	24/11/2020	Sanjay Kumar Agarwalla
2.	A review of information flows for generating, aggregating and reporting the monitoring parameters	West Bengal	24/11/2020	Sanjay Kumar Agarwalla
3.	Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the CPA-DD	West Bengal	24/11/2020	Sanjay Kumar Agarwalla
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	West Bengal	24/11/2020	Sanjay Kumar Agarwalla
5.	A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the CPA-DD and the selected methodology and corresponding tool(s), where applicable	West Bengal	24/11/2020	Sanjay Kumar Agarwalla
6.	A review of calculations and assumptions made in determining the GHG data and emission reductions	West Bengal	24/11/2020	Sanjay Kumar Agarwalla
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	West Bengal	24/11/2020	Sanjay Kumar Agarwalla

**D.3. Interviews**

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Banerjee	Moulindu	Sapient Infotech <sup>1</sup>	24/11/2020	Project implementation and operation, monitoring procedure, data and information flow, Survey records, Sales/Distribution records, WBT procedure and records, Sampling Plan, CER waiver records and procedure, QA/QC Procedures, Management and operating system	Sanjay Kumar Agarwalla

<sup>1</sup> Sapient Infotech is the entity contracted by the Project Participant, atmosfair gGmbH for distribution of stoves and collection of charcoal along with the other monitoring activities.



2.	Dutta	Sanjit K	Sapient Infotech	24/11/2020	Project implementation and operation, monitoring procedure, data and information flow, Survey records, Sales/Distribution records, WBT procedure and records	Sanjay Kumar Agarwalla
3.	Sing	Ananda	Kastury Consultancy	24/11/2020	Sales/Distribution records, CER waiver records and procedure, Charcoal Production and collection	Sanjay Kumar Agarwalla
4.	Banerjee	Suddhasattwa	Sapient Infotech	24/11/2020	Sales/Distribution records, CER waiver records and procedure, Charcoal Production and collection	Sanjay Kumar Agarwalla
5.	Bera	Motilal	Maa Tara Coal & Chemicals (Charcoal buyer)	24/11/2020	Charcoal purchase and sell to end user	Sanjay Kumar Agarwalla
6.	Naskar	Siddhartha	Sapient Infotech	24/11/2020	Charcoal Production and collection	Sanjay Kumar Agarwalla
7.	Mikolajewski	Katrin	atmosfair gGmbH	24/11/2020 (skype call)	Project implementation and operation, monitoring procedure, data and information flow, Quality Assurance – Management and operating system, Monitoring records, MR and ER calculation	Sanjay Kumar Agarwalla
8.	Goyal	Hitesh	Nature Club of Rajasthan	24/11/2020 (phone)	Project implementation and operation, monitoring procedure, data and information flow, Quality Assurance – Management and operating system, Monitoring records	Sanjay Kumar Agarwalla

#### D.4. Sampling approach

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As assessed in above sections, emission reductions for the one CPA (10526-P1-0001-CP1) are being claimed for this monitoring period and the total population of the stoves distributed are 55,291 till the end of the monitoring period.

The sampling plan implemented by the CME is in accordance with the applied approved monitoring methodologies /B02/ and the registered PoA-DD /B04/ and revised CPA-DD /15/. The CME/PP has appropriately performed Simple Random Sampling in accordance with the applied methodologies /B02/ and the monitoring plan provided in the PoA-DD /B04/ and the CPA-DD /15/.

The sampling surveys and WBTs have been carried out by the well-trained personnel /9/. Monitoring parameters  $DO_{II,G,y}$  and  $fillings_{y=1}$  are monitored through monitoring sample surveys. Monitoring parameters  $\eta_{new,y}$  and  $load_{y=1}$  are monitored through conducting water boiling tests. Monitoring of the parameters ensures compliance with the applied methodologies AMS-II.G, version 10.0 and AMS-III.BG, version 03 /B02/. Verification team has checked the survey records /5/ and water boiling test records /11/ to confirm the test results. Parameter  $DO_{II,G,y}$  monitors the drop out from total population of ICS in the monitoring period. Parameter  $fillings_{y=1}$  monitors the number of fillings and  $load_{y=1}$  monitors the filling size. Both the parameters  $fillings_{y=1}$  and  $load_{y=1}$  are used to calculate the value of the parameter  $B_{y=1,new,survey}$ .

CME has done a sampling for the PoA and the only CPA reported in the monitoring period, CPA 1 for the current monitoring period. A confidence/precision level of 95/10 has been used by the PP for all the 4 monitoring parameters determined through applying simple random sampling. An annual survey has been carried out. This is in accordance with the sampling plan provided in the registered PoA-DD / CPA-DD /B04/. The sample size calculations for each of the monitoring parameters monitored through the sampling have been provided in the table below. As the calculated sample size were less than 30, in accordance with the §13 of the sampling standard version 8 /B07/, a minimum sample size of 30 has been chosen when the parameter of interest is a proportion ( $DO_{II,G,y}$ ) and Student's t-distribution has been used if the resulting sample size is less than 30 for the mean parameters ( $load_{y=1}$ ,  $fillings_{y=1}$  and  $\eta_{new,j}$ ).

The resultant applied sample size by the PP are summarized below:

Parameters	$DO_{II,G,y}$	$fillings_{y=1}$	$load_{y=1}$	$\eta_{new,j}$
Calculated Sample Size	21	12	7	7
Applied Sample Size (to account for non-responses)	30	30	9	9
Precision achieved	0%	4.24%	0.50%	0.56%

As per paragraph 25 of the Sampling Standard, version 08 /B07/, the verification team has to verify whether the project participants or the coordinating/managing entity have implemented the sampling and surveys according to the sampling plan in the registered monitoring plan. The verification includes determining:

- Whether the required confidence/precision has been met;
- Whether the selected sample was representative of the population.

In line with paragraph 26 of the Sampling Standard, the verification team has applied a sampling approach for on-site visit interviews as part of verification. Now as the CME had applied sampling approach, the verification team has chosen to apply acceptance sampling in accordance with paragraph 28 of the sampling standard /B07/.

DOE used sampling during verification for checking the reported values for the monitoring parameters to check the operational status, fillings sizes, load sizes and to check if the WBT tests have been done in the households. As per the sampling standard /B07/, DOE had identified 18 samples out of the PP's 30 samples for the parameters  $DO_{II,G,y}$  and  $fillings_{y=1}$  and confirmed all the 9 samples for the parameters  $load_{y=1}$  and  $\eta_{new,j}$  based on the AQL/UQL stated below. A sample size of

18 was required, based on an AQL of 1 % and UQL of 20 %, the producer risk used is 10 % and consumer risk used was 10 %. Acceptance number (c) thus determined for the sample is 1. All the identified 18 samples had the same operational status, average load sizes and fillings as reported in the sampling frame of the CME and hence no discrepancy was found (i.e.  $c=0$ ). All the households sampled for the monitoring parameter  $\eta_{new,j}$  confirmed that the WBT tests were conducted on the stoves from those households. Thus, PP's set of records has been accepted in line with §32 of the sampling standard (version 08.0) /B07/. Verification team has cross verified these sample documents.

The following table illustrates the agenda covered during the acceptance sampling by the verification team, which is as per Table 1, paragraph 37 of "Standard: Sampling and surveys for CDM project activities and programmes of activities (version 08.0);

Parameter	How the CME conducted sampling surveys (to obtain the project participants' or the coordinating/managing entities' records)	How the DOE could obtain records for verification	Criteria for deciding what ultimately constitutes a discrepancy
% of improved cook stoves (ICS) in operation; Average number of weekly fillings of a batch-loaded ICS	Sampling based survey (questionnaire survey/interviews)	Cross-check of a sample of project participants' samples (questionnaire operation surveys/interviews) including but not limited to following: <ul style="list-style-type: none"> <li>• Consistency between the information as contained in Survey sheet and revealed from the on-site visit interviews</li> <li>• Baseline scenario of the household</li> <li>• Enquire/observe the pre-project/baseline stove/s and its operation during the project scenario.</li> <li>• Enquire/observe parallel use of any other stove and their fuel</li> <li>• Enquire/observe source /storage of fuelwood /charcoal or any other fuel</li> <li>• Enquire number of meals cooked (along with family size of household) on project cook stove or any other baseline and/or stoves utilizing other fuel/s.</li> </ul>	DOE results, accounting for duly justified differences.
Efficiency of improved cook stoves (ICS); Average amount of fuelwood used per filling of an	Water Boiling Test as the procedure allowed for efficient test prescribed by applied CDM methodology	Check the test reports/methods; check qualifications/ capabilities of testers;	Whether conducted by qualified institutions/testers; Whether conducted in accordance with approved

ICS			established international/national standards, procedures and test methods prescribed by applicable CDM methodologies.
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The sampling plan implemented by the CME is in accordance with the applied approved monitoring methodology /B02/ and the PoA-DD/CPA-DD /B04/ /15/. The CME has appropriately performed Simple random Sampling procedure in line with the applied methodology. As the registered PoA-DD /B04/ mentions the option for Simple random Sampling procedure, it is acceptable to the verification team.

The necessary confidence / precision of 95/10 each of the parameters are met. This has been cross verified by the verification team from the supporting documents submitted /04/.

#### D.5. Clarification requests, corrective action requests and forward action requests raised

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
<b>General</b>			
Compliance of the monitoring report with the monitoring report form	01	01	-
Remaining forward action requests from validation and/or previous verifications	-	-	03
CPAs considered for verification and covered in this report	-	-	-
<b>Programme of activities</b>	-	-	-
Compliance of the programme implementation with the registered PoA-DD	-	-	-
Implementation and operation of the management system	-	-	-
Post-registration changes	-	-	-
• Corrections	-	-	-
• Inclusion of a monitoring plan	-	-	-
• Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents <sup>2</sup>	01	-	-
• Changes to the programme design	-	-	-
• Addition of CPA inclusion template	-	-	-
• Change of coordinating/managing entity	-	-	-
• Changes specific to afforestation and reforestation activities	-	-	-
<b>Component project activities</b>	-	-	-
Compliance of the CPA implementation with the included CPA design document	-	-	-
Post-registration changes	-	-	-
• Temporary deviations from registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents	-	-	-
• Corrections	-	-	-
• Changes to the start date-of the crediting period	-	-	-
• Inclusion of a monitoring plan	-	-	-
• Permanent changes to the registered monitoring	-	-	-

<sup>2</sup> 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).

plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents			
• Changes to the project design	-	-	-
• Changes specific to afforestation and reforestation activities	-	-	-
Compliance of the registered monitoring plan with applied methodologies and standardized baselines	-	-	-
Compliance of monitoring activities with the registered monitoring plan	-	-	-
• Data and parameters fixed ex ante or at renewal of crediting period	03	01	-
• Data and parameters monitored	05	01	-
• Implementation of sampling plan	-	01	-
Compliance with the calibration frequency requirements for measuring instruments	01	-	-
Assessment of data and calculation of emission reductions or net removals	-	-	-
• Calculation of baseline GHG emissions or baseline net GHG removals by sinks	01	01	-
• Calculation of project GHG emissions or actual net GHG removals by sinks	-	-	-
• Calculation of leakage GHG emissions	-	-	-
• Summary of calculation of GHG emission reductions or net GHG removals by sinks	-	-	-
• Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included CPA	-	-	-
• Remarks on difference from estimated value in included CPA	-	-	-
Assessment of reported sustainable development co-benefits	-	-	-
Global stakeholder consultation	01	-	-
Others (please specify)	-	-	-
<b>Total</b>	<b>13</b>	<b>05</b>	<b>03</b>

## SECTION E. Verification findings

### E.1. General

#### E.1.1. Compliance of the monitoring report with the monitoring report form

<b>Means of verification</b>	DR, I
<b>Findings</b>	CAR 01 and CL01 had been raised and successfully resolved. Please refer to Appendix 4 for further details.
<b>Conclusion</b>	CME has used the Monitoring report form for CDM programme of activities, Version 04.0 /B03/. Verification team confirms that the latest available version of the Monitoring report template /B03/ has been used by the CME and the MR is in compliance of the monitoring report form and instructions therein /B03/.

#### E.1.2. Remaining forward action requests from validation and/or previous verifications

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There were 3 forward action requests from validation which are resolved during this verification. Please refer to Appendix 4 for further details.

**E.1.3. CPAs considered for verification and covered in this report**

Title and UNFCCC reference number of the CPA included in the PoA as of the end of this monitoring period	Is the CPA considered for this verification? (yes/no)	The date when the CPA was included	Version of the PoA-DD	Confirmation that a request for issuance including the CPA has been published for the previous monitoring period (Y/N)
Improved cook stoves and sustainable charcoal initiative – 10516-P1-0001-CP1	Yes	26/06/2020	Version 6.0	N

**E.2. Programme of activities****E.2.1. Compliance of the programme implementation with the registered programme design document**

<b>Means of verification</b>	Document Review, Interview
<b>Findings</b>	-
<b>Conclusion</b>	CC IPL by means of on-site interviews and document review, assessed that all physical features (technology, project equipment, and monitoring equipment) of the included CPA in the registered PoA-DD are in place and that the coordinating/managing entity has operated the PoA and the CPA as per the registered PoA-DD and the CPA-DD.

**E.2.2. Implementation and operation of the management system**

<b>Means of verification</b>	Document Review, Interview
<b>Findings</b>	-
<b>Conclusion</b>	<p>The PoA management system including the record-keeping system has been explained in the registered PoA-DD /B04/. During the course of verification, verification team based on review of provided documents and on-site interviews has assessed this management system. Verification team evaluated the management systems in place to implement the monitoring of the project activity. This included the roles and responsibilities of the monitoring staff, data collection, transfer and aggregation procedures, data storage and archiving procedure for the monitoring system. Monitoring surveys and WBTs were conducted by Sapient Infotech.</p> <p>Recipient household of ICS have ceded the rights of all entitlement of CERs to the CME of the PoA, this has been checked through the review of the signed sales agreements with the end users /8/ as was also cross-checked during the on-site visit through interviews with the households. Operation of the ICSs in the CPA 1 (10516-0001) was confirmed during the interviews by the verification team. Following was confirmed during the on-site visit interviews:</p> <ol style="list-style-type: none"> <li>1. Stoves numbering system</li> <li>2. Monitoring system including input procedure (including hard copy sales agreements with the end users)</li> <li>3. Actual implementation of the stoves</li> <li>4. Household-representatives were interviewed regarding the usage of stove and the sampling for the monitoring parameters <math>DO_{II,G,y}</math>, <math>fillings_{y=1}</math>, <math>load_{y=1}</math> and <math>\eta_{new,j}</math></li> <li>5. Whether or not baseline technology was still in use</li> <li>6. Process of data collection during installation of stove</li> <li>7. Sales Agreements between households and CPA implementer</li> </ol> <p>The charcoal generated from the households is collected by the Field Agents (FAs) contracted by Sapient with whom the PP atmosfair gGmbH has contractual agreement and then stored at small collection points close to the households. The charcoal is then sold to the retailers and the retailers sell it to the end users. The</p>

	<p>representatives of the project participant, charcoal collection field agents, retailers and end users were interviewed by the verification team to confirm the process. Following details were checked during the site visit:</p> <ol style="list-style-type: none"> <li>1. Charcoal collection procedure (including the records by field agents)</li> <li>2. Daily reports on the charcoal collected /19/</li> <li>3. Contract with the charcoal retailers/ Agreement with charcoal retailers that the charcoal end users shall not be large scale industries /21/</li> <li>4. Sales invoices with the charcoal retailers /19/</li> </ol> <p>In order to ensure completeness and accuracy of monitoring information, electronic database is operated and maintained by the PP / CPA implementer. This information is further maintained by the PP, who verifies the reported sales with the number of stoves produced by the manufacturer and also the charcoal distributed data base with the sale invoice/receipt. The data is further periodically checked by the PP to ensure there is no double counting. This provision for the avoidance of double counting as outlined in the PoA management system has been verified by means of review records of sales database /6/ and on-site visit interviews during the course of verification.</p> <p>It was confirmed during the on-site interviews and by checking the monitoring system that all the roles and responsibilities related to monitoring are fulfilled by representatives of CME / PP and the CPA implementer.</p> <p>The responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan /B04/ and the revised CPA-DD /15/.</p> <p>The details about monitoring system have been provided in Section D of the Monitoring report /2/. The data flow and management and reporting structure was also checked during the on-site visit interviews.</p> <p>The verification team confirms that the monitoring management system of the CDM PoA is in place, with the responsibilities properly identified and in place. This confirms the compliance of § 340 (a) and § 347 (b) (iv) of CDM VVS PoAs. Version 02.0 /B01-1/.</p>
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### **E.2.3. Post-registration changes**

#### **E.2.3.1. Corrections**

>>

There are no corrections applicable to the monitoring period that have been approved by the Board during this monitoring period or to be submitted with the request for issuance.

#### **E.2.3.2. Inclusion of a monitoring plan**

>>

There are no inclusions of monitoring plan to the registered programme of activities has been approved by the Board during this monitoring period.

#### **E.2.3.3. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents**

>>

There are no permanent changes to the registered monitoring plan or permanent deviation of the monitoring from the applied methodology during the current monitoring period.

#### **E.2.3.4. Changes to the programme design**

>>

There are no changes to the programme design of the registered PoA-DD.

**E.2.3.5. Addition of CPA inclusion template**

&gt;&gt;

Not applicable

**E.2.3.6. Change of coordination/managing entity**

&gt;&gt;

Not applicable

**E.2.3.7. Changes specific to afforestation and reforestation activities**

&gt;&gt;

Not applicable

**E.3. Component project activities****E.3.1. Compliance of the CPA implementation with the included CPA design document**

<b>Means of verification</b>	Document Review, Interview																										
<b>Findings</b>	-																										
<b>Conclusion</b>	<p>The implementation status of the PoA and the component project activities is:</p> <table border="1"> <tr> <td>Co-ordinating and Managing entity/Project Participants:</td><td>Nature Club of Rajasthan</td></tr> <tr> <td>Title of the PoA:</td><td>Improved cook stoves and sustainable charcoal initiative</td></tr> <tr> <td>UNFCCC registration No:</td><td>PoA - 10516</td></tr> <tr> <td>Applied Baseline and monitoring methodology:</td><td>AMS-II.G, Version 10, AMS-III.BG, Version 03, AMS-I. E, Version 09</td></tr> </table> <table border="1"> <tr> <td>Title of the CPA:</td><td>Improved cook stoves and sustainable charcoal initiative – CPA No 01</td></tr> <tr> <td>CPA reference number:</td><td>10516-P1-0001-CP1</td></tr> <tr> <td>Date of inclusion:</td><td>26/06/2020</td></tr> <tr> <td>CPA implementer</td><td>atmosfair gGmbH / Nature Club of Rajasthan</td></tr> <tr> <td>Project Scale:</td><td>Small scale</td></tr> <tr> <td>Applied Baseline and monitoring methodology:</td><td>AMS-II.G, Version 10, AMS-III.BG, Version 03</td></tr> <tr> <td>Location of the CPA:</td><td>India</td></tr> <tr> <td>CPA crediting period:</td><td>26/06/2020 to 25/06/2027</td></tr> <tr> <td>Reported monitoring Period verified in this verification:</td><td>26/06/2020 – 31/08/2020</td></tr> </table> <p>The CPA involves the distribution of improved cooking stoves and production of charcoal from TLUD stoves in the host country India. The coordinating/managing entity for the PoA is Nature Club of Rajasthan. The technical specifications /7/ of the stove were checked by the verification team and found in accordance with the stove implemented. The numbers of stoves deployed under the CPA is 55,291 which has been confirmed through the review of the sales database /6/. All stoves reported in the monitoring and sales database and considered for issuance during this verification have been sold until 31/08/2020.</p> <p>The monitored annual thermal energy savings per stove as calculated in the ER sheet /4/ is 0.0127 GWth which is less than the microscale threshold of 60 GW<sub>thermal</sub>. The monitored value for the emission reductions per stove due to the type III methodology, AMS-III.BG (version 03.0) /B02/ is 1.70 tCO<sub>2e</sub> per annum which is less than the microscale threshold of 20,000 tCO<sub>2e</sub>.</p> <p>The component project activity was implemented, and equipment installed as described in the revised CPA DD /15/.</p> <p>As a part of the on-site visit interviews, the verification team was able to confirm</p>	Co-ordinating and Managing entity/Project Participants:	Nature Club of Rajasthan	Title of the PoA:	Improved cook stoves and sustainable charcoal initiative	UNFCCC registration No:	PoA - 10516	Applied Baseline and monitoring methodology:	AMS-II.G, Version 10, AMS-III.BG, Version 03, AMS-I. E, Version 09	Title of the CPA:	Improved cook stoves and sustainable charcoal initiative – CPA No 01	CPA reference number:	10516-P1-0001-CP1	Date of inclusion:	26/06/2020	CPA implementer	atmosfair gGmbH / Nature Club of Rajasthan	Project Scale:	Small scale	Applied Baseline and monitoring methodology:	AMS-II.G, Version 10, AMS-III.BG, Version 03	Location of the CPA:	India	CPA crediting period:	26/06/2020 to 25/06/2027	Reported monitoring Period verified in this verification:	26/06/2020 – 31/08/2020
Co-ordinating and Managing entity/Project Participants:	Nature Club of Rajasthan																										
Title of the PoA:	Improved cook stoves and sustainable charcoal initiative																										
UNFCCC registration No:	PoA - 10516																										
Applied Baseline and monitoring methodology:	AMS-II.G, Version 10, AMS-III.BG, Version 03, AMS-I. E, Version 09																										
Title of the CPA:	Improved cook stoves and sustainable charcoal initiative – CPA No 01																										
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CPA implementer	atmosfair gGmbH / Nature Club of Rajasthan																										
Project Scale:	Small scale																										
Applied Baseline and monitoring methodology:	AMS-II.G, Version 10, AMS-III.BG, Version 03																										
Location of the CPA:	India																										
CPA crediting period:	26/06/2020 to 25/06/2027																										
Reported monitoring Period verified in this verification:	26/06/2020 – 31/08/2020																										



that the Programme of activities and the component project activity's implementation are in accordance with the project description contained in the revised CPA-DD /15/.

The information (including data and variables) provided in the MR /2/ is in line with the details provided in the CPA-DD /15/.

CC IPL's verification team considers the project description of the project contained in the registered PoA-DD and the CPA-DD /15/ to be complete and accurate.

In accordance with § 342 of CDM VVS for PoAs, version 02 /B01-1/, the verification team confirms that there is no information (data and variables) in the current monitoring period that are different from that stated in the CPA-DD which has caused an increase in the estimates of GHG emission reductions.

Verification team has assessed the project in order to check any proposed or actual changes to the project design in accordance with § 269 of CDM VVS for PoAs, Version 02.0. In the opinion of CC IPL, there is no change to the project design. CC IPL's verification team confirms that the CPA are implemented within the boundary of the PoA as described in the registered PoA-DD.

In accordance with § 342 (c) of CDM VVS for PoAs, Version 02.0 /B01-1/, information (data and variables) provided in the monitoring report that are different from that stated in the CPA-DD /15/, have been assessed. The assessment is summarized below:

Parameter	Ex-ante value in the CPA-DD	Actual operation for the reported monitoring period	Assessment by the verification team
Adjusted total number of ICS of batch <i>j</i> operating during year <i>y</i> ( $N_{y,j}$ )	71,325 for the year 2020	9,671 (actual number of stoves sold till the end of monitoring period is 55,291)	The number of ICS deployed in the CPA weighted by the number of days a stove is operating in the CPA has decreased from the ex-ante estimates. The verification team noted that this CPA is a microscale CPA without having any limit on the number of cook stoves which can be installed. The value has been cross-checked with the sales database /6/ for the dates and the number of stoves and found to be correct. This parameter has no impact on the per unit emission reductions.  This is deemed acceptable to the verification team.
Efficiency of the device of each type <i>i</i> and batch <i>j</i> ( $\eta_{new,i}$ )	28%	27.78%	The verification team noted that the thermal efficiencies as per the CPA-DD will be determined by Water Boiling Test (WBT) with the random sampling

				during the current monitoring period. The monitored thermal efficiency for cook-stoves is less than the estimated values in the CPA-DD which is deemed acceptable to the verification team.
	Quantity of woody biomass used by project devices in tonnes per project device ( $B_{y=1,new,survey}$ )	1.69 t/year	1.736 t/year	The amount of woody biomass consumption by the project device is based on the actual monitored <i>ex-post</i> value for the current monitoring period. The monitored value is more than the <i>ex-ante</i> estimated <i>ex-ante</i> value in the CPA-DD. As the value is based on the actual monitored values as verified with the survey records and cross checked during the on-site interviews as a part of acceptance sampling and thus is deemed acceptable to the verification team.
	Statistically adjusted drop out from total population of ICS in period $y$ ( $DO_{II,G,y}$ )	5 %	0%	The value of the parameter has decreased from the <i>ex-ante</i> estimations /B04/ which causes increase in emission reductions. The value of dropout rate was checked by the verification team through interviews for the sampled households and the responses from the households were same as the monitored value. Furthermore, verification team had asked the households the reasons for no dropouts and the sampled households responded that it was due to the fact that the project stoves helped them in the generation of income for the household, that is why no dropouts. Hence, the same is acceptable to the verification team.
	Produced quantity of charcoal in	0.34 tons/a	0.33 tons/a	Produced quantity of charcoal is lower than the <i>ex-ante</i> estimate

	year y ( $Q_{CCP,y}$ )			value in the CPA-DD. The value is a monitored value and is determined through actual collection records. The collection records /19/ have been cross-checked with the retailer sales records /19/ and the values are comparable, as demonstrated in the ER sheet /4/.
	Emission reductions per stove/year (tCO <sub>2</sub> )			The monitored value of the ERs per unit of stove is 4.24 tCO <sub>2</sub> e/year /4/. ERs of 2.54 tCO <sub>2</sub> e/year/stove is achieved on the account of applied methodology AMS-II.G (version 10.0) /B02/ (marginally higher than the ex-ante value in the CPA-DD: 2.50. The main reason for this increase is due to slightly higher monitored value for the parameter " $B_{y=1,new,survey}$ ," as compared to the CPA-DD value and 0 dropout rate) and 1.70 tCO <sub>2</sub> e/year/stove is achieved on the account of applied methodology AMS-III.BG (version 03.0) /B02/ (marginally lower than the ex-ante value in the CPA-DD: 1.77). However, there is no increase in the overall per unit emission reductions as compared to the ex-ante estimates.
		4.28	4.24	
<p>In the opinion of CCIPL, there is no change to the project design. CCIPL's verification team confirms that the CPA are implemented within the boundary of the PoA as described in the registered PoA-DD and the implementation and operation of the project activity has been conducted in accordance with the description contained in the registered PoA-DD and CPA-DD.</p> <p>The verification team took cognizance of § 340, § 341 and § 342 of the CDM VVS for PoAs, version 02 /B01-1/ to conduct the verification and conducted a site visit in accordance with the § 321 and 322 of the CDM VVS for PoAs, version 02 /B01-1/.</p>				

**E.3.2. Post-registration changes****E.3.2.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents**

&gt;&gt;

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

**E.3.2.2. Corrections**

&gt;&gt;

The following corrections in the CPA: 10516-P1-0001-CP1 are approved by UNFCCC on 06/04/2021 (effective approval date is 05/04/2021) with reference number PRC-10516-001:

## Section A1:

- The evidence calculation for the Micro Scale Limit was corrected, since a wrong formula for the calculation formula was used.
- The reference to the Project standard regarding the microscale limits was corrected.

## Section A3:

The stove lifetime was corrected. It now reflects the manufacturer's specifications.

## Section A.7:

The history of the CPA section was corrected and missing information on similar projects implemented in the same project region was added.

## Section B4.2:

- The parameter table for the  $NCV_{\text{charcoal}}$  was moved to the section B5.1 since it is a monitoring parameter and measurement methods and procedures for the parameter  $NCV_{\text{charcoal}}$  were corrected since they were not in line with the PoA DD.

## Section B4.3

- The table for ex-ante emission calculation was corrected, since it did not reflect the source of data as per the monitoring plan of the CPA. It is now in line with the monitoring plan of the CPA.

## Section B5.1:

- The parameter table for the parameter  $t_y$  was deleted, since it is not relevant for the calculation of ER as outlined in the Monitoring Plan.

**E.3.2.3. Changes to the start-date of the crediting period**

&gt;&gt;

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

**E.3.2.4. Inclusion of a monitoring plan**

&gt;&gt;

There are no inclusions of monitoring plan to included CPA-DD.

**E.3.2.5. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents**

&gt;&gt;

There are no permanent changes to the registered monitoring plan or permanent deviation of the monitoring from applied methodologies during the current monitoring period.

#### E.3.2.6. Changes to the project design

>>

There are no changes to the programme design of the included CPA-DD.

#### E.3.2.7. Changes specific to afforestation and reforestation activities

>>

Not applicable

#### E.3.3. Compliance of the registered monitoring plan with applied methodologies and standardized baselines

<b>Means of verification</b>	Document Review, Interview
<b>Findings</b>	-
<b>Conclusion</b>	The verification team is able to confirm that the monitoring plan contained in the revised CPA-DD /15/ is in accordance with the approved methodologies applied by the project activity, i.e. AMS-II. G, version 10 and AMS-III. BG. Version 03 /B02/.

#### E.3.4. Compliance of monitoring activities with the registered monitoring plan

The monitoring has been carried out in accordance with the monitoring plan contained in the CPA-DD /15/. This conclusion has been made based on assessment below in section E.3.4.1, E.3.4.2 and E.3.4.3 below.

##### E.3.4.1. Data and parameters fixed ex ante or at renewal of crediting period

<b>Means of verification</b>	Document Review, Interview
<b>Findings</b>	CAR 02, CL 03, CL 04 and CL 05 had been raised and successfully resolved. Please refer to Appendix 4 for further details.
<b>Conclusion</b>	Verification team confirms that the Data and parameters fixed ex ante are in compliance with the CPA-DD /15/ and the monitoring plan. Please refer Appendix 5 for detailed analysis of the ex-ante parameters.

##### E.3.4.2. Data and parameters monitored

<b>Means of verification</b>	Document Review, Interview
<b>Findings</b>	CAR 03, CL 06, CL 07, CL 08, CL 09 and CL 10 had been raised and successfully resolved. Please refer to Appendix 4 for further details.
<b>Conclusion</b>	The Verification team confirms that the Data and parameters monitored are in compliance with the CPA-DD /15/ and the monitoring plan. A complete assessment of each of the monitored parameters has been provided in Appendix 6 of the verification report.

##### E.3.4.3. Implementation of sampling plan

<b>Means of verification</b>	Document Review, Interview
<b>Findings</b>	CAR 04 had been raised and successfully resolved. Please refer to Appendix 4 for further details.
<b>Conclusion</b>	<p>The total population of the stoves under CPA 1 considered for the monitoring period is 55,291. The monitoring parameters required to be monitored through the sampling plan are:  <math>DO_{II,G,y}</math>, <math>fillings_{y=1}</math>, <math>load_{y=1}</math> and <math>\eta_{new,j}</math>.</p> <p>The sampling plan implemented by the CME is in accordance with the applied approved monitoring methodologies /B02/ and the registered PoA-DD/CPA-DD /B04/. The CME/PP has appropriately performed Simple Random Sampling in accordance with the applied methodologies /B02/ and the monitoring plan provided in the PoA-DD /B04/ and the CPA-DD /15/.</p> <p>The sampling surveys and WBTs have been carried out by the well-trained personnel /9/. Monitoring parameters <math>DO_{II,G,y}</math> and <math>fillings_{y=1}</math> are monitored through</p>

monitoring sample surveys. Monitoring parameters  $\eta_{new,y}$  and  $load_{y=1}$  are monitored through conducting water boiling tests. Monitoring of the parameters ensures compliance with the applied methodologies AMS-II.G, version 10.0 and AMS-III.BG, version 03 /B02/. Verification team has checked the survey records /5/ and water boiling test records /11/ to confirm the test results. Parameter  $DO_{II,G,y}$  monitors the drop out from total population of ICS in the monitoring period. Parameter  $fillings_{y=1}$  monitors the number of fillings and  $load_{y=1}$  monitors the filling size. Both the parameters  $fillings_{y=1}$  and  $load_{y=1}$  are used to calculate the value of the parameter  $B_{y=1,new,survey}$ .

CME has done a sampling for the PoA and the only CPA reported in the monitoring period, CPA 1 for the current monitoring period. A confidence/precision level of 95/10 has been used by the PP for all the 4 monitoring parameters determined through applying simple random sampling. An annual survey has been carried out. This is in accordance with the sampling plan provided in the registered PoA-DD / CPA-DD /B04/. The sample size calculations for each of the monitoring parameters monitored through the sampling have been provided in the table below. As the calculated sample size were less than 30, in accordance with the §13 of the sampling standard version 8 /B07/, a minimum sample size of 30 has been chosen when the parameter of interest is a proportion ( $DO_{II,G,y}$ ) and Student's t-distribution has been used if the resulting sample size is less than 30 for the mean parameters ( $load_{y=1}$ ,  $fillings_{y=1}$  and  $\eta_{new,j}$ ).

The resultant applied sample size by the CME are summarized below:

Parameters	$DO_{II,G,y}$	$fillings_{y=1}$	$load_{y=1}$	$\eta_{new,j}$
Calculated Sample Size	21	12	7	7
Applied Sample Size (to account for non-responses)	30	30	9	9
Precision achieved	0%	4.24%	0.50%	0.56%

Applying the random number generator, the ICS were randomly picked from the defined population upto the required sample size as calculated by the PP. The verification team confirms that the applied method for sample size calculation is in accordance with the PoA-DD / CPA-DD /B04/.

As per paragraph 25 of the Sampling Standard, version 08 /B07/, the verification team has to verify whether the project participants or the coordinating/managing entity have implemented the sampling and surveys according to the sampling plan in the registered monitoring plan. The verification includes determining:

- Whether the required confidence/precision has been met;
- Whether the selected sample was representative of the population.

In line with paragraph 26 of the Sampling Standard, the verification team has applied a sampling approach for on-site visit interviews as part of verification. Now as the CME had applied sampling approach, the verification team has chosen acceptance sampling in accordance with paragraph 28 of the sampling standard /B07/.

DOE used sampling during verification for checking the reported values for the monitoring parameters to check the operational status, fillings sizes, load sizes and to check if the WBT tests have been done in the households. As per the sampling standard /B07/, DOE had identified 18 samples out of the PP's 30 samples for the parameters  $DO_{II,G,y}$  and  $fillings_{y=1}$  and confirmed all the 9 samples for the parameters  $load_{y=1}$  and  $\eta_{new,j}$  based on the AQL/UQL stated below. A sample size of 18 was required, based on an AQL of 1 % and UQL of 20 %, the producer risk used is 10 % and consumer risk used was 10 %. Acceptance number (c) thus determined for the sample is 1. All the identified 18 samples had the same operational status, average load sizes and fillings as reported in the sampling frame of the CME and hence no discrepancy was found (i.e.  $c=0$ ). All the households sampled for the monitoring parameter  $\eta_{new,j}$  confirmed that the WBT tests were

	<p>conducted on the stoves from those households. Thus, PP's set of records has been accepted in line with §32 of the sampling standard (version 08.0) /B07/. Verification team has cross verified these sample documents.</p> <p>Please also refer to the assessment provided in Appendix 7 of this report.</p> <p>The verification took cognizance of § 348 of CDM VVS for PoAs, Version 02.0 /B01-1/.</p>
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### E.3.5. Compliance with the calibration frequency requirements for measuring instruments

<b>Means of verification</b>	Document Review, Interview
<b>Findings</b>	CL 11 had been raised and successfully resolved. Please refer to Appendix 4 for further details.
<b>Conclusion</b>	The stove efficiency ( $\eta_{new,j}$ ) has been measured by the use of measuring equipment. The stove efficiency testing has been done by WBTs conducted in line with the guidance provided in the PoA-DD/CPA-DD /B04/. The monitoring equipment used for conducting the stove efficiencies by WBTs are digital thermometer, weigh balance and moisture meter. All the monitoring equipment were duly calibrated prior to the start of the water boiling tests as checked through the review of the calibration certificates /12/. The personnel carrying out the WBTs have been trained as demonstrated by the WBT training certificates for the concerned personnel /9/. The appropriate QA/QC procedures have been followed for the monitoring parameter. The moisture meters are self-calibrating type and performs calibration during each cycle of measurement.

### E.3.6. Assessment of data and calculation of emission reductions or net removals

In line with the requirement of § 358 and § 359 of CDM VVS for PoAs, Version 02.0 /B01-1/, the verification team has reviewed the Monitoring report /2/ and ER spread sheets /4/ to check the arithmetic calculation of the emission reductions. The equation used for the calculation is compared with those provided in the revised CPA-DD /15/ and the methodology AMS-II.G, Version 10, and AMS-III.BG, Version 03 /B02/.

#### E.3.6.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

<b>Means of verification</b>	Document Review, Interview
<b>Findings</b>	CAR 05 and CL 12 had been raised and successfully resolved. Please refer to Appendix 4 for further details.
<b>Conclusion</b>	<p>The equations for baseline emissions, as provided in the Monitoring report /X/ and confirmed with the CPA-DD /B04/ and the methodologies AMS-II.G, Version 10 and AMS-III. BG, Version 03 /B02/, are:</p> $ER_{total} = ER_{II.G} + ER_{III.BG}$ <p>Where:</p> <p><math>ER_{total}</math> Total emission reductions of the CPA</p> <p><math>ER_{II.G}</math> Emission reductions of the stove efficiency component</p> <p><math>ER_{III.BG}</math> Emission reductions of the charcoal generation component</p> <p><b>Emission reductions from the Stove Efficiency Improvements Component (AMS-II.G)</b></p> $ER_{II.G,y} = \sum_i \sum_j ER_{II.G,y,i,j} - LE_y$ <p>Where:</p> <p>i Indices for the situation where more than one type of project device is introduced to replace the pre-project devices</p> <p>j Indices for the situation where there is more than one batch of project device</p> <p><math>ER_y</math> Emission reductions during year y in t CO<sub>2</sub>e</p> <p><math>ER_{y,i,j}</math> Emission reductions by project device of type i and batch j during year y in t CO<sub>2</sub>e</p>

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

Where:

- $B_{y,savings,i,j}$  = Quantity of woody biomass that is saved in tonnes per cook stove device of type  $i$  and batch  $j$  during year  $y$
- $f_{NRB,y}$  = Fraction of woody biomass that can be established as non-renewable biomass using survey methods or government data. Default country specific fraction of non-renewable woody biomass (fNRB) values available on the CDM website.
- $NCV_{biomass}$  = Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.0156 TJ/tonne, based on the gross weight of the wood that is 'air-dried')
- $EF_{projected\_fossil\ fuel}$  = Emission factor for the fossil fuels projected to be used for substitution of non-renewable woody biomass by similar consumers. Use a value of 63.7 t CO<sub>2</sub>/TJ
- $N_{y,i,j}$  = Number of project devices of type  $i$  and batch  $j$  operating during year  $y$ ,
- $\mu_{y,i,j}$  = Adjustment to account for any continued use of pre-project devices during the year  $y$ . Set to one according to AMS-II.G paragraph 17.

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

Where:

- $B_{y=1,new,i,survey}$  = Quantity of woody biomass used by project device of type  $i$ .
- $\eta_{old,i,j}$  = Efficiency of the old devices being replaced by project device of type  $i$  and batch  $j$ .
- $\eta_{new,i,j}$  = Efficiency of the project device  $i$  and batch  $j$ . Charcoal generated in the ICS will not be considered if this charcoal will be used outside the ICS, according to AMS-III.BG.

The formula used for emission reductions on account of the methodology AMS-III.BG, version 3 /B02/. AMS-III.BG gives the following baseline formula:

$$ER_{III.BG,y} = \sum_i Q_{CCP,i,y} \times \left[ \left( CF \times NCV_{wood} \times \frac{NCV_{charcoal}}{NCV_{charcoal,default}} \times f_{NRB,BL,wood} \times EF_{projected\_fossil\ fuel} \right) + (SMG_{y,b} - M_d) \times (1 - f_{NRB,BL,wood}) \times GWP_{CH4,y} \right] - PE_{y,fugitive} - PE_{y,flaring} - PE_{FF,y} - PE_{El,y} - PE_{BC,y}$$

Where

- $ER_{III.BG,y}$  = Emission reductions in year  $y$  (t CO<sub>2</sub>e/yr)
- $Q_{CCP,i,y}$  = Quantity of charcoal type  $i$  produced and used in year  $y$  (t)
- $CF$  = Default wood to charcoal conversion factor



$NCV_{wood}$	= Net calorific value of wood(TJ/t)
$NCV_{charcoal}$	= Net calorific value of the charcoal produced during the project (TJ/t)
$NCV_{charcoal,default}$	= Default net calorific value of charcoal (TJ/t)
$f_{NRB,BL,wood}$	= Fraction of biomass used in the absence of the project activity that can be established as non-renewable biomass; determined as per the procedure found in the latest version of AMS-I.E. Determined here as described in this section B.6.1 under AMS-II.G.
$EF_{projected\_fossilfuel}$	= Emission factor for the substitution of non-renewable woody biomass by similar consumers (t CO <sub>2</sub> /TJ)
$GWP_{CH_4,y}$	= Global warming potential of methane applicable to the crediting period (t CO <sub>2</sub> e/t CH <sub>4</sub> )
$SMG_{y,b}$	= Specific methane generation for the baseline charcoal generation process in the year y; a default value of 0.030 t CH <sub>4</sub> /t charcoal may be used.
$M_d$	= Factor to account for any legal requirement for capture and destruction of methane in the charcoal production facility (tonne of CH <sub>4</sub> /tonne of raw material)
$PE_{y,flaring}$	= If applicable, emissions due to the flare inefficiency. In case captured pyrolysis gas is gainfully used (e.g. used for production of heat as in the case of micro-gasifier), then it can be taken as zero.
$PE_{FF,y}$	= Project emissions due to fossil fuel consumption in charcoal production facilities in year y (t CO <sub>2</sub> )
$PE_{El,y}$	= Project emissions due to electricity consumption in charcoal production facilities in year y (t CO <sub>2</sub> )
$PE_{BC,y}$	= Project emissions due to biomass cultivation in year y (t CO <sub>2</sub> )

$PE_{y,flaring}$  is not applicable since pyrolysis gas is used for cooking.  $M_d$  is set to zero since there is obviously no legal requirement to capture methane in micro gasifier stoves.  $PE_{FF,y}$  and  $PE_{El,y}$  are not considered since no fossil fuels or electricity are used in the ICS;  $PE_{BC,y}$  is not applicable since no biomass will be cultivated for charcoal production since it is produced as a by-product of daily cooking.

$PE_{y,fugitive}$  is calculated as follows :

$$PE_{y,fugitive} = \sum_i Q_{CCP,iy} \times GWP_{CH_4,y} \times SMG_{y,b} \times f$$

Where:

$PE_{y,fugitive}$	= Fugitive emissions from operation of charcoal producing facility (physical leakage) in the year y (t CO <sub>2</sub> e)
$f$	= A fraction attributed to project charcoal production technology, use a default value of 0.1.

	$Q_{ccp,i,y}$ = Quantity of charcoal type i produced and used in year y (t) $Q_{ccp,i,j}$ = Quantity of charcoal type i produced and used in year y (t)
	<p>From the above equation and the parameter values, emission reductions are calculated as 41,004 tCO<sub>2</sub>e.</p> <p>The verification team confirms that the calculation of baseline emission and emission reductions is in accordance with the applied methodological equations and the PoA-DD/CPA-DD. Calculations have been checked and confirmed from the ER spread sheet /4/.</p> <p>The verification took cognizance of § 358 of CDM VVS for PoAs, version 02.0 /B01-1/.</p>

### E.3.6.2. Calculation of project GHG emissions or actual net GHG removals by sinks

<b>Means of verification</b>	Document Review, Interview
<b>Findings</b>	-
<b>Conclusion</b>	There are no project emissions identified in the monitoring methodology /B02/ and the CPA-DD /B04/.

### E.3.6.3. Calculation of leakage GHG emissions

<b>Means of verification</b>	Document Review, Interview
<b>Findings</b>	-
<b>Conclusion</b>	Net-to-gross adjustment factors for leakage (fixed default values of 0.95 as per AMS II.G. version 10.0) /B02/ was applied to the project activity to calculate Emission Reductions of this Monitoring Period.

### E.3.6.4. Summary of calculation of GHG emission reductions or net GHG removals by sinks

<b>Means of verification</b>	Document Review, Interview
<b>Findings</b>	-
<b>Conclusion</b>	<p>The 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 CPA-DD. The total number of ERs achieved during the monitoring period is 41,004 tCO<sub>2</sub>e.</p> <p>In summary, verification team confirms that actual emission reduction is lower than the estimate of the CPA-DD /B04/ for the current monitoring period.</p> <p>The verification took cognizance of § 358 of CDM VVS PoAs, version 02 /B01-1/.</p>

Title and UNFCCC reference number of the CPA	Baseline emissions or baseline net GHG removals by sinks (tCO <sub>2</sub> e)	Project emissions or actual net GHG removals by sinks (tCO <sub>2</sub> e)	Leakage (tCO <sub>2</sub> e)	GHG emission reductions or net GHG removals by sinks (tCO <sub>2</sub> e)		
				Amount achieved before 1 January 2013	Amount achieved from 1 January 2013	Amount achieved in the entire monitoring period
10516-P1-0001-CP1	41,004	-	-	0	41,004	41,004
<b>Total</b>	<b>41,004</b>	<b>-</b>	<b>-</b>	<b>0</b>	<b>41,004</b>	<b>41,004</b>

**E.3.6.5. Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included CPA**

<b>Means of verification</b>	Document Review
<b>Findings</b>	-
<b>Conclusion</b>	Comparison of the actual GHG emission reductions with the estimates in the included specific CPAs is given in the below table. The verification team took cognizance of § 358 of CDM VVS for PoAs, version 02 /B01-1/.

<b>Title and UNFCCC reference number of the CPA</b>	<b>Actual values achieved by the CPAs during this monitoring period</b>	<b>Value estimated in ex ante calculation in the included CPA-DD(s)</b>
10516-P1-0001-CP1	41,004	55,883
<b>Total</b>	<b>41,004</b>	<b>55,883</b>

**E.3.6.6. Remarks on difference from estimated value in included CPA**

<b>Means of verification</b>	Document review
<b>Findings</b>	-
<b>Conclusion</b>	The actual emission reductions are less than the ex-ante estimated values in the CPA-DD.

**E.3.7. Assessment of reported sustainable development co-benefits**

<b>Means of verification</b>	Not applicable (as there are no sustainable development co-benefits required as per the registered CPA-DD)
<b>Findings</b>	-
<b>Conclusion</b>	Not applicable

**E.3.8. Global stakeholder consultation**

<b>Means of verification</b>	DR, I
<b>Findings</b>	CL 13 had been raised and successfully resolved. Please refer to Appendix 4 for further details.
<b>Conclusion</b>	The monitoring report for the PoA was webhosted for the global stakeholder consultation on 27/10/2020. Comments were received from the global stakeholder consultation by the DOE. Please refer to Appendix 4 for further details regarding the GSC.

**SECTION F. Internal quality control**

&gt;&gt;

The final verification report 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 has performed the technical review.

**SECTION G. Verification opinion**

&gt;&gt;

Carbon Check (India) Private Ltd. has performed the first periodic verification of the registered CDM Programme of Activities "Improved cook stoves and sustainable charcoal initiative" in India (hereafter referred to as "Programme of Activities or PoA") for the CPA titled "Improved cook stoves and sustainable charcoal initiative – CPA 1".

The verification team assigned by the DOE concludes that the PoA-DD (Version 6.0, dated 09/03/2020), CPA 10516-P1-0001-CP1 as described in the revised CPA-DD /15/ and the Monitoring report (Version 5, dated 06/04/2021) /2/, meet all relevant requirements of the UNFCCC for CDM project activities including 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 programme of activities requirements version 02.0 /B01-1/.

## Verification methodology and process:

The Verification team confirms the contractual relationship signed on 14/08/2020 between the DOE, Carbon Check (India) Private Ltd. and the Project Participant, (atmosfair gGmbH). The team assigned to the verification meets the Carbon Check (India) Private Ltd.'s internal procedures including the UNFCCC requirements for the team composition and competence.

The verification is being performed as per the requirements described in the CDM VVS for PoAs, version 02.0 /B01-1/ and constitutes the review and completion of the following steps:

- Reviewing the registered PoA-DD (Version 6.0, date 09/03/2020), the CPA DD for 10516-P1-0001-CP1 including the monitoring plan and the corresponding validation report/s /B04/;
- Review of the revised CPA-DD /15/
- Publication of the MR on the UNFCCC website (version 1.0, 21/10/2020) on 27/10/2020;
- Desk review of the validation report, MR and other relevant documents including documents related to the project activities in emission reductions
- Review of the applied monitoring methodologies (AMS-II.G, version 10 and AMS-III.BG, version 3);
- Review of any CMP and EB decisions, clarifications and guidance;
- On-site assessment on 24/11/2020
- Resolution of CARs and CLs raised during verification (to be done)
- Issuance of Verification Report

The CPA was correctly implemented according to the selected monitoring methodologies, monitoring plan and the CPA-DD /15/. 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 interviews, the verification team confirms that the PoA has resulted in the 41,004 tCO<sub>2</sub>e emission reductions during the first monitoring period for CPA 1

The break-up of emission reduction upto 31<sup>st</sup> December 2012 and 1<sup>st</sup> January 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
Emission reductions (t CO <sub>2</sub> e)	0	41,004

CCIPL as a DOE is therefore, pleased to issue a positive verification opinion in the attached Certification statement.

## SECTION H. Certification statement

>>

Carbon Check (India) Private Ltd., the DOE, has performed the verification of the registered Programme of Activities, UNFCCC Registration Number 10516, "Improved cook stoves and sustainable charcoal initiative" in India. The PoA involves replacement of less efficient cooking stoves using woody biomass with ICS which are more efficient micro wood gasifier and produce conventional charcoal. The ICS distributed under CPA of the PoA are more efficient in transferring heat from the fuel to the pot when compared to the stoves typically used in baseline. By replacing inefficient stoves, the PoA will save on consumption of woody biomass and improve the indoor air quality.

The CPA of the PoA is designed to generate emission reductions by distribution of the fuel-efficient fuel wood based cook stoves in India. The CME and CPA implementer are responsible for the

collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the component project activity/ies. It is DOE's responsibility to express an independent verification statement on the reported GHG emission reductions from the component project/s. The DOE does not express any opinion on the selected baseline scenario or on the validated and registered PoA-DD/CPA-DD. The verification is carried out in-line with the VVS requirements.

The verification was performed to identify the compliance of the component project/ies with implementation and monitoring requirements, and to verify the actual amount of achieved emission reductions, through obtaining evidence and on-site visit interviews 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:

- PoA-DD Version 6.0 dated 09/03/2020 and the included CPA-DD including their validation reports /B04/;
- Revised CPA-DD /15/
- Approved monitoring methodology AMS-II.G "Energy efficiency measures in thermal applications of non-renewable biomass", Version 10; and AMS-III.BG., "Emission reduction through sustainable charcoal production and consumption" Version 03
- Monitoring reports Version 1, 3, 4 and 5 dated 21/10/2020, 06/01/2021, 03/02/2021 and 06/04/2021 respectively.

This statement covers verification period from 26/06/2020 – 31/08/2020 (both dates included)

The DOE has raised 13 clarification and 05 corrective action requests, all of which have been resolved by the CME.

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


The DOE, hereby certifies that the project activity, achieved emission reductions by sources of GHG equal to 41,004 tCO<sub>2</sub>e and all monitoring requirements have been fulfilled and is substantiated by an audit trail that contains evidence and records. 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
Emission reductions (t CO <sub>2</sub> e)	0	41,004

## Appendix 1. Abbreviations

Abbreviations	Full texts
AQL	Acceptable Quality Limit
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CAR	Corrective Action Request
CC IPL	Carbon Check (India) Private Ltd.
CER	Certified Emission Reduction
CL	Clarification Request
CME	Co-ordinating and Managing entity
CPA	Component Project Activity
CPA-DD	Component Project Activity Design Document
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> e	Carbon Dioxide Equivalent
DR	Document review
DOE	Designated Operational Entities
DVR	Draft Verification Report
EB	CDM Executive Board
EF	Emission Factor
EI	External individual
FA	Final Approval
FAR	Forward Action Request
FVR	Final verification Report
GHG	Greenhouse gas(es)
GWh	Giga Watt Hour
I	Interview
IPCC	Intergovernmental Panel on Climate Change
IR	Internal resource
MP	Monitoring Period
MWh	Mega Watt Hour
MR	Monitoring Report
NCR	Nature Club of Rajasthan
PoA	Programme of Activities
PoA-DD	Programme of Activities Design Document
PP	Project Participant
QC/QA	Quality control /Quality assurance
TA	Technical Area
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
UQL	Unacceptable Quality Limit
VVS	Validation and Verification Standard
WBT	Water boiling test

## Appendix 2. Competence of team members and technical reviewers



**Carbon**  
CHECK

**Carbon Check (India) Private Ltd.**

**Sanjay Agarwalla**

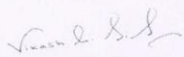
has been qualified as per CCIPL's internal qualification procedures, in accordance with requirements of Accreditation Standard (version 07.0):

For following functions:

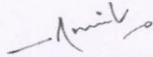
Validator	<input checked="" type="checkbox"/>	Team Leader	<input checked="" type="checkbox"/>	Technical reviewer	<input checked="" type="checkbox"/>
Verifier	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>	Local Assessor <sup>1</sup>	<input checked="" type="checkbox"/>

In the following Technical Areas:

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



Mr. Vikash Kumar Singh  
Compliance Officer



Mr. Amit Anand  
CEO

**Date of Approval**  
24/12/2020

**Valid Till**  
24/12/2021

**Revision History of the Document**

26/12/2014	Initial Adoption
24/12/2015	Annual Revision
20/01/2016	Interim Revision for office address change
23/12/2017	Annual Revision
24/12/2017	Annual Revision
24/12/2018	Annual Revision
24/12/2019	Annual Revision
01/03/2020	Interim Revision for office address change
01/09/2020	Interim Revision for CCIPL logo change
24/12/2020	Annual Revision

<sup>1</sup> India

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## Carbon Check (India) Private Ltd.

### Subhendu Biswas

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 Assessor ☐

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

Mr. Amit Anand  
CEO

Date of Approval  
24/12/2020

Valid Till  
24/12/2021

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### Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	atmosfair	Webhosted Monitoring report Interim MR Interim MR	Version 1, dated 21/10/2020 Version 3, dated 06/01/2021 Version 4, dated 03/02/2021	PP
2	atmosfair	Final Monitoring report	Version 5, dated 06/04/2021	PP
3	atmosfair	Emission reduction calculation spread sheet corresponding to /1/	-	PP
4	atmosfair	Emission reduction calculation spread sheet corresponding to /2/	-	PP
5	Sapient	Survey records for the monitoring period	-	PP
6	atmosfair	CPA distribution records including evidence for the dates of distribution	-	PP
7	Sapient	Stove specifications	-	PP
8	Sapient	Sample stoves sales receipt / user agreement	-	PP
9	atmosfair	Training records and competence of monitoring team (Survey and WBT)	-	PP
10	Atmosfair / Sapient / NCR	- Copy of contract in between CME/PP/CPA implementer and Sapient - Contract in between Sapient, Kastury, Quality Enterprise	-	PP
11	Sapient	Water boiling test records (original raw data records and calculation spread sheets)	-	PP
12	Metrology Dept. / Technocalibration	Calibration records for the monitoring equipment (weigh balance for charcoal and weigh balance, thermometer & moisture meter for WBT)	-	PP
13	atmosfair	Evidence for random number generator for sampling	-	PP
14	Clean Cooking Alliance	WBT conducting methodology/protocol for the cook stoves	Version 4.2.3	PP
15	atmosfair	- Revised CPA-DD (CPA1) - Validation opinion for PRC in CPA-DD (CPA 1)	Version 5, dated 29/01/2021 Version 02, dated 02/02/2021	PP
16	Sapient	Copies of the contracts with stove manufacturer including Manufacturing inventory sheets	-	PP
17	ESKAPS India Pvt.Ltd.	Laboratory report for NCV of charcoal	-	PP
18	atmosfair	Sample size calculation sheet along with actual samples conducted and the reliability assessment (provided in ER spread sheet)	-	PP
19	atmosfair	Charcoal database Invoice/receipts for Charcoal sale including Charcoal Daily report from the Field Agents for the monitoring period	-	PP
20	atmosfair	Employment records of charcoal collection field agents	-	PP
21	Sapient	Evidence for Eligibility criterion 11: <i>"Samples of agreements to be signed with ICS users, confirming that traditional wood stoves were used for"</i>	-	PP

		<i>cooking in the baseline situation and samples of agreements to be signed with charcoal buyers, shortly describing their business and confirming that they are no large scale industries".</i>		
22	Paul Anderson / IP Flair	Document related to GSC:  - Declaration Letter from Paul Anderson dated 27/07/2020  - Free to Operate report from IP Flair	-	PP
23	Sapient	Evidence for "Charcoal users will sign agreements stating that they will not claim ER for the use of the charcoal provided under this CPA".	-	PP
24		Evidence for: AMS III.B.G para 4: End users of charcoal shall be: (i) households; or (ii) small and medium enterprises (SMEs); or (iii) a group of households served by a charcoal market (e.g. charcoal consuming urban areas). End users do not include large scale industries.	--	PP
B01	UNFCCC	1.Validation and Verification Standard for PoAs, version 02 2.Project Standard for PoAs, version 02 3.Project Cycle Procedure for PoAs, version 02	<a href="http://cdm.unfccc.int/">http://cdm.unfccc.int/</a>	Others
B02	UNFCCC	Applied baseline and monitoring methodologies, AMS-II.G, version 10.0 and AMS-III.BG, version 03	<a href="http://cdm.unfccc.int/">http://cdm.unfccc.int/</a>	Others
B03	UNFCCC	Instructions for filling out the monitoring report form for CDM programme of activities, version 03.0 and version 04.0	<a href="http://cdm.unfccc.int/">http://cdm.unfccc.int/</a>	Others
B04	UNFCCC	Registered PoA-DD, Version 6.0 dated 09/03/2020; CPA-DD for 10516-P1-0001-CP1: Version 03 date 20/06/2020 and corresponding validation reports	<a href="http://cdm.unfccc.int/">http://cdm.unfccc.int/</a>	Others
B05	Web sites	Websites: <a href="http://cdm.unfccc.int/">http://cdm.unfccc.int/</a> <a href="http://www.ipcc-nggip.iges.or.jp/">http://www.ipcc-nggip.iges.or.jp/</a> <a href="http://www.pciaonline.org/testing">http://www.pciaonline.org/testing</a>	==	Others
B06	UNFCCC	Guidelines: Sampling and surveys for CDM project activities and programmes of activities, Version 04.0	<a href="http://cdm.unfccc.int/">http://cdm.unfccc.int/</a>	Others
B07	UNFCCC	Standard: Sampling and surveys for CDM project activities and programmes of activities, version 08.0	<a href="http://cdm.unfccc.int/">http://cdm.unfccc.int/</a>	Others
B08	UNFCCC	Guideline: Application of materiality in verifications" Version 02.0	<a href="http://cdm.unfccc.int/">http://cdm.unfccc.int/</a>	Others

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

**Table 1. Remaining FARs from validation and/or previous verification**

<b>FAR ID</b>	1	<b>Section no.</b>	E.1.2	<b>Date:</b> 25/11/2020
<b>Description of FAR</b>				
The validation team has understood there are 43,150 cookstoves are distributed so far as on today. Explain how the batches are framed for CPA1.				
<b>CME response</b>				<b>Date:</b> 16/12/2020
<i>The registered CPA DD in reference to the Methodology AMS-II.G version 10. Includes the option of batching the stoves or monitoring purposes. The CME/PP decided not to use batches for the monitoring exercise of the current monitoring Period, which is in accordance with the CPA DD and the Methodology AMS-II.G version 10. The sample for the monitoring exercise was drawn from all stoves included in the Monitoring Period and contains stoves from each year of stove distribution (2018, 2019 and 2020).</i>				
<b>Documentation provided by the CME</b>				
<i>ER spreadsheet containing information on the sales dates of the sampled stoves.</i>				
<b>DOE assessment</b>				<b>Date:</b> 19/12/2020
The verification team noted that till the end of the current monitoring period, 55,291 stoves have been distributed. As clarified by the CME, the PoA-DD and the CPA-DD provides the options of either batch wise monitoring or without forming any batch. CME has opted the option without any batch formation of the stoves distributed for monitoring purpose. This is in line with the PoA-DD/CPA-DD and the applied methodology and hence deemed acceptable to the verification team. The FAR is closed.				

<b>FAR ID</b>	2	<b>Section no.</b>	E.1.2	<b>Date:</b> 25/12/2020
<b>Description of FAR</b>				
Input and grievance mechanism is not adequate/robust. Households interviewed does not know carbon credits, complaints procedure.				
<b>CME response</b>				<b>Date:</b> 16/12/2020
<i>During the local stakeholder consultation the implementation of a grievance mechanism was discussed. Stakeholders agreed to implement various options for the stakeholders to raise any kind of input or grievance. Amongst others a grievance book was placed in a central location (project office) and an e-mail address and the two phone numbers were given to the stakeholders. However, since every two weeks a field agent visits each of the households included in the project to collect the charcoal from the households, the most convenient and direct option to place grievance is the direct communication with the field agents. This natural way of communication might not be conceived by the households a "grievance mechanism" or "complaints procedure", but the system has been shown to be very robust in the two similar GS projects GS1296 and GS3024. For the PoA10516 no grievance has been raised so far. During the sales of the cookstoves, each stove user is informed that they receive the stoves for a reduced price, because the project is a carbon credit project registered under the CDM. Stove buyers are also informed that they do cede their right to claiming CERs by signing the end user agreement. Each stove user has signed this agreement.</i>				
<b>Documentation provided by the CME</b>				
-				
<b>DOE assessment</b>				<b>Date:</b> 19/12/2020
The verification team confirms that the end user agreement for each of the project stove mentions about their ceding of right to claim CERs. Also during the on-site interviews with the sampled end users and the field agents, the verification team could confirm that every two weeks, a field agent visits each of the households included in the project to collect the charcoal from the households. During this charcoal collection process, there is direct communication in between the end user and the field agents wherein the end users can place their grievance if any. In the sampled households by the verification team, no grievance was noted and all of them highly praised the project stove the earning due to charcoal selling generated from the project stoves. The FAR is closed.				

<b>FAR ID</b>	3	<b>Section no.</b>	E.1.2	<b>Date:</b> 25/11/2020
<b>Description of FAR</b>				
CME will demonstrate further that how the charcoal retailers fulfill their contracts and assure that the end users of charcoal are ceding the rights on the carbon credits. (CAR 5 is converted into FAR.)				
<b>CME response</b>				<b>Date:</b> 16/12/2020

PP provided agreements between the charcoal retailers and charcoal end users in which the end users confirm that they cede their rights on the CERs.	
<b>Documentation provided by the CME</b>	
Agreements between Charcoal retailers and charcoal end users.	
<b>DOE assessment</b>	<b>Date:</b> 19/12/2020
During the on-site visit interviews with the charcoal retailers and end users and also on review of the signed contract, the verification team confirms that the end users of charcoal cedes their rights on carbon credits. The FAR is closed.	

Table 2. CLs from this verification

<b>Description of CL</b>	
In section B.1 of the MR CME needs to clarify the relevance of the below statement:	
<i>“Additionally, fuel wood consumption shall be reduced even more by providing ICS users with 100% renewable biomass as a fuel, such as waste wood from plantations. The project will purchase and organize the distribution of the renewable biomass and ensures that just sources are used that are in line with the requirements according to Glossary of CDM terms v10.0. The specific sources will be clarified on CPA level when the specific sources are known”.</i>	
<b>CME's response</b>	<b>Date:</b> 16/12/2020
PP removed the statement from the MP, since in the only CPA1 included in this MP no renewable biomass is distributed.	
<b>Documentation provided by CME</b>	
Revised MR	
<b>DOE assessment</b>	<b>Date:</b> 19/12/2020
CME has deleted the irrelevant statement in the revised MR. The CL is closed.	

<b>CL ID</b>	02	<b>Section no.</b>	E.2.3.3	<b>Date:</b> 25/11/2020
<b>Description of CL</b>				
CME needs to confirm the stated PRC for PoA in section B.2.3 of the MR.				
<b>CME's response</b>				<b>Date:</b> 16/12/2020
PP removed the PRC from the MR. The PRC does not affect the CPA1 covered in this MP.				
<b>Documentation provided by CME</b>				
Revised MR				
<b>DOE assessment</b>				<b>Date:</b> 19/12/2020
No PRC is being proposed in the PoA-DD during the current monitoring period. MR has been revised accordingly. The CL is closed.				

<b>CL ID</b>	03	<b>Section no.</b>	E.3.4.1	<b>Date:</b> 25/11/2020
<b>Description of CL</b>				
Source of data for the parameter “ <b>NCV<sub>charcoal,default</sub></b> ” has been incorrectly stated in the MR section E.1.				
<b>CME's response</b>				<b>Date:</b> 16/12/2020
PP corrected the source of data for the parameter “ <b>NCV<sub>charcoal,default</sub></b> ”				
<b>Documentation provided by CME</b>				
Revised MR				
<b>DOE assessment</b>				<b>Date:</b> 19/12/2020
CME has appropriately revised the source of data for the parameter “ <b>NCV<sub>charcoal,default</sub></b> ” in the MR. The CL is closed.				

<b>CL ID</b>	04	<b>Section no.</b>	E.3.4.1	<b>Date:</b> 25/11/2020
<b>Description of CL</b>				
As per the PoA-DD, the parameter “ <b>NCV<sub>charcoal</sub></b> ” is a monitoring parameter whereas in the MR this parameter has been applied as ex-ante fixed parameter. CME needs to clarify compliance with the applied meth in this respect.				
<b>CME's response</b>				<b>Date:</b> 16/12/2020
PP moved the the parameter “ <b>NCV<sub>charcoal</sub></b> ” to the monitoring section of the MR. The parameter will be monitored during the first year of the crediting period as per the registered PoA DD and applied Methodology AMS-III.BG version 3.				
<b>Documentation provided by CME</b>				

Revised MR and CPA-DD	
<b>DOE assessment</b>	<b>Date:</b> 19/12/2020
<p>As per the registered PoA-DD and the applied methodology, AMS-III.B.G, version 03, <math>NCV_{charcoal}</math> is a monitoring parameter based on paragraph 28, table 8. As per the stated paragraph, CME can either apply Option 1: monitored once during the first year of the crediting period or Option 2: using one of the options provided in appendix 1 (of the meth).</p> <p>Now as the project involves micro gasifiers, the option 1 of the appendix of the meth cannot be applied (i.e. default value assumed: from IPCC 2006, Volume 2, Table 1.2).</p> <p>In this context, the verification team noted that in the included CPA 10516-P1-0001-CP1, this parameter was incorrectly opted as an ex-ante parameter with a fixed default value of 29.5 GJ/tonne which is not in line with the registered PoA-DD and the applied methodology AMS-III.B.G, version 03. Accordingly, post-registration changes to the included CPA, are being notified in accordance with paragraph 250 of PS for PoAs, version 02 and para 170 of PCP for PoAs, version 02.</p> <p>CME has opted to apply Option 1 (the parameter is monitored by an accredited laboratory and the monitored value will be applied for the rest of the crediting period). MR and ER spread sheet have also been revised in this respect. For the current monitoring period, CME has applied the average value of the monthly measured and reported values from June 2020 to November 2020 which is deemed acceptable.</p> <p>The CL is closed.</p>	

<b>CL ID</b>	05	<b>Section no.</b>	E.3.4.1	<b>Date:</b> 25/11/2020
<b>Description of CL</b>				
As per the CPA-DD, the parameter " $\eta_{old}$ " is a monitoring parameter whereas in the MR this parameter has been applied as ex-ante fixed parameter. CME needs to clarify.				
<b>CME's response</b>				<b>Date:</b> 16/12/2020
PP moved the parameter to the monitoring section.				
<b>Documentation provided by CME</b>				
Revised MR				
<b>DOE assessment</b>				<b>Date:</b> 19/12/2020
CME has submitted revised MR by shifting the stated parameter in the monitoring section. The CL is closed.				

<b>CL ID</b>	06	<b>Section no.</b>	E.3.4.2	<b>Date:</b> 25/11/2020
<b>Description of CL</b>				
WBTs for the sampled stoves were conducted by Sapient Infotech as confirmed during the on-site visit interviews and document review. But in the MR section E.2 reference of Ministry of Micro, Small & Medium Enterprises is stated. Clarification is requested.				
<b>CME's response</b>				<b>Date:</b> 16/12/2020
PP corrected the statement in CPA DD.				
<b>Documentation provided by CME</b>				
Revised MR				
<b>DOE assessment</b>				<b>Date:</b> 19/12/2020
CME has confirmed in the revised MR that the WBTs were conducted by Sapient Infotech. The CL is closed.				

<b>CL ID</b>	07	<b>Section no.</b>	E.3.4.2	<b>Date:</b> 25/11/2020
<b>Description of CL</b>				
For the stove efficiency parameter, CME has stated "No batches were established for the ER calculation" in section E.2 of the MR. CME is requested to clarify the compliance of the PoA-DD/CPA-DD and the applied methodology AMS-II.G, version 10.				
<b>CME's response</b>				<b>Date:</b> 16/12/2020
<p>The registered CPA DD in reference to the Methodology AMS-II.G version 10 includes the option of batching the stoves or monitoring purposes. The CME/PP decided not to use batches for the monitoring exercise of the current monitoring period, which is in accordance with the CPA DD and the Methodology AMS-II.G version 10. The sample for the monitoring exercise was drawn from all stoves included in the Monitoring Period and contains stoves from each year of stove distribution (2018, 2019 and 2020). Since the sample was drawn as a simple random sample from the entire population of stoves using a computerized sampling procedure, the sample of stoves is representative of the entire population and does represent stoves of all ages as they do occur in the entire population. Thus the average efficiency gained from the efficiency tests of this sample is an average efficiency of stoves of all ages included in the project does reflect the stove age distribution of the population.</p>				
<b>Documentation provided by CME</b>				

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<b>DOE assessment</b>	<b>Date:</b> 19/12/2020
In the included CPA-DD, it is stated “ <i>In case no batches are established for ER calculation, the stove efficiency is determined from a representative random subsample of all stoves included in the monitoring period</i> ”. CME has applied random sampling from the whole of population for monitoring purpose. Hence all the stoves in the whole population have got equal probability of falling under the random samples and hence deemed acceptable to the verification team. The CL is closed.	

<b>CL ID</b>	08	<b>Section no.</b>	E.3.4.2	<b>Date:</b> 25/11/2020
<b>Description of CL</b>				
Few of the monitoring parameters stated in the CPA-DD (like "t <sub>y,i,j</sub> ", "Life Span", "Date of commissioning of batch j", "Date of commissioning of project device i", "N <sub>d,HH</sub> ") have not been covered in the MR. Clarification is requested.				
<b>CME's response</b>				<b>Date:</b> 16/12/2020
PP amended the list of monitoring parameters to be in line with the CPA DD.				
<b>Documentation provided by CME</b>				
Revised MR and CPA-DD				
<b>DOE assessment</b>				<b>Date:</b> 19/12/2020
All the relevant missing parameters have been included in the revised MR. However, it is noted that the parameter "t <sub>y,i,j</sub> " is not relevant In this context, the verification team noted that in the included CPA 10516-P1-0001-CP1, parameter "t <sub>y,i,j</sub> " is not relevant which was incorrectly stated in the monitoring section. Accordingly, post-registration changes to the included CPA, are being notified in accordance with paragraph 250 of PS for PoAs, version 02 and para 170 of PCP for PoAs, version 02 by removing this irrelevant parameter from section E.2 of the revised CPA-DD. The CL is closed.				

<b>CL ID</b>	09	<b>Section no.</b>	E.3.4.2	<b>Date:</b> 25/11/2020
<b>Description of CL</b>				
It is noted that the data for stove no. A43326 and A44695 are interchanged in the survey sheet of the ER spread sheet. Clarification is requested.				
<b>CME's response</b>				<b>Date:</b> 16/12/2020
PP corrected the survey sheet of the ER spread sheet. The data entry is now done for the correct stove number. The corrections did not affect the ER calculations.				
<b>Documentation provided by CME</b>				
ER sheet				
<b>DOE assessment</b>				<b>Date:</b> 19/12/2020
CME has submitted revised ER spread sheet by correcting the typo error in the survey records. The CL is closed.				

<b>CL ID</b>	10	<b>Section no.</b>	E.3.4.2	<b>Date:</b> 25/11/2020
<b>Description of CL</b>				
CME needs to clarify on the charcoal data presented in the ER spread sheet (the terminology e.g WK085/WK84/WK72 used in the row 4) and provide all the records for the charcoal collected by the Field Agents (FAs) and invoices for the charcoal sold.				
<b>CME's response</b>				<b>Date:</b> 16/12/2020
The terminology of WKxx refers to the week in which the charcoal has been collected/sold. The week numbers are also indicated on the charcoal collection sheets and the Charcoal sales bills. PP provided spreadsheet with a clearer terminology.				
<b>Documentation provided by CME</b>				
Charcoal data				
<b>DOE assessment</b>				<b>Date:</b> 19/12/2020
CME has clarified the stated terminology for charcoal data. Also the records for the charcoal collected by the FAs and the invoices for the charcoal sold have been provided to the verification team. The charcoal records have been checked by the verification team and found to be correct. The CL is closed.				

<b>CL ID</b>	11	<b>Section no.</b>	E.3.5	<b>Date:</b> 25/11/2020
<b>Description of CL</b>				
CME needs to provide the weighing scales details for the three charcoal collection centers used for measuring the charcoal sold. Also details of the moisture meter used for conducting WBTs has not been provided in the MR.				
<b>CME's response</b>				<b>Date:</b> 16/12/2020

PP provided details of all weighing scales and the moisture meter in the MR and supporting documents to the DOE.	
<b>Documentation provided by CME</b>	
Calibration documents for the three charcoal scales and the information on the Moisture meter including the evidence for self-calibration of the device.	
<b>DOE assessment</b>	<b>Date:</b> 19/12/2020
CME has provided the calibration certificates for all the weigh scales but the dates of the calibration is incorrectly stated for the scale with serial no. 60750201. Hence the CL remains open.	
<b>CME's response</b>	<b>Date:</b> 06/01/2021
PP corrected the calibration date for the scale with the serial number 60750201 to be in line with the calibration certificate.	
<b>Documentation provided by CME</b>	
Revised MR	
<b>DOE assessment</b>	<b>Date:</b> 13/01/2021
CME has corrected the calibration date in the revised MR which has been found to be correct. The CL is closed.	

<b>CL ID</b>	12	<b>Section no.</b>	E.3.6.1	<b>Date:</b> 25/11/2020
<b>Description of CL</b>				
In the sheet "Ny" of the ER spread sheet, emission reduction calculations have been done based on the ex-ante estimated values. CME needs to clarify.				
<b>CME's response</b>				<b>Date:</b> 16/12/2020
PP corrected the calculation of ER in the sheet "Ny" of the ER spread sheet.				
<b>Documentation provided by CME</b>				
-				
<b>DOE assessment</b>				<b>Date:</b> 19/12/2020
CME needs to clarify the purpose of providing the ex-ante calculation of ERs for the current monitoring period. Also in the sub sheet "CPA 1 MSC Limits of the ER spread sheet, CME has still used the NCV <sub>charcoal</sub> value as default value instead of the monitored value. The CL remains open.				
<b>CME's response</b>				<b>Date:</b> 06/01/2021
The PP deleted the information in tab Ny of the ER spreadsheet and corrected the NCV <sub>charcoal</sub> value in the "CPA 1 MSC Limits" tab of the ER spread sheet.				
<b>Documentation provided by CME</b>				
Revised ER sheet				
<b>DOE assessment</b>				<b>Date:</b> 13/01/2021
CME has removed the irrelevant ex-ante calculation of ER in the revised ER sheet. Also the sheet CPA 1 MSC Limits" has been corrected for the value of NCV <sub>charcoal</sub> as per the monitored value. The CL is closed.				

<b>CL ID</b>	13	<b>Section no.</b>	E.1.1	<b>Date:</b> 25/11/2020
<b>Description of CL</b>				
CME is requested to provide response for the GSC received during the publication period of the MR as below: Query : POA 10516 is identical to POA10292 in every way. How was it established that POA10516 does not harm the interests of the stakeholders POA10292, including that of the proposed beneficiaries under POA10292.				
Supportive evidence to the query :				
1. There is no information available on how the following requirement of CDM standards was verified in POA10516 : "CDM Project Standard for PoAs requires that if a proposed project (or CPA) is in the same geographical location as an existing project –The Coordinating and Managing Entity must declare that the proposed project/CPA will not lead to the discontinuation or modification of the former project and does not decrease the GHG emission reductions or net anthropogenic GHG removals by the former project. The UN's Project Standard for PoAs also requires that a new project in the same geography/ same partner utilize both a different measure and a different technology from those of the former project"				
2. POA 10292 has made no progress at all after the verification audit for CPA1 (by DOE Carbon Check which came under UNFCCC query, unanswered till date); CPA-2 (with no progress on deployment of ICS after registration audit by DOE Earthhood and an initial few deployments); 2 proposed CPAs-3&4 that were commissioned for registration audit with DOE Epic Sustainability was stopped midway during the audit and never pursued by Atmosfair to be rectified.				

3. It has already been highlighted to CDM team/DOE Carbon Check that Atmosfair has disputes with one of the project stakeholders of POA 10292 that has not been formally nor legally settled; and which is under arbitration by IGCC (Indo-German Chamber of Commerce) with the notification that disclosures by Atmosfair upon which the audits are made will be unsound, invalid, non-compliant to CDM rules and detrimental to several future stakeholders. We also requested the CDM governing process to withhold submissions from Atmosfair/Sapient if it is around the same technology (TLUD cookstove), until the dispute is formally settled. How was POA 10516 admitted despite such notifications?

Possible impacts triggered by such projects :

1. POA 10516 awards undue and inequitable advantages to its stakeholders catering to vested business interests rather than supporting sustainable community development based on ethical and equitable business practices. Such practices cannot stand up to the tests of public scrutiny and accountability; to the rigours of robust and principled audit nor to host country statutory requirements. In the event of this happening, the stakeholders will abandon the project causing broken promises, trust and reneged contracts to all other stakeholders and to beneficiaries, except to themselves. When such scenarios present themselves, it becomes the responsibility of the governing process to anticipate future tragedies and raise the requisite calls to avert them.

2. The poor households that should have been benefited under POA 10292 with better upgraded clean tech have instead been given stoves whose quality is suspect; whose manufacturing practices have not been declared nor audited for quality - thereby questioning their ability to actually reduce emissions, besides making the households pay for products that should/could have been cleaner and healthier for them.

Submitted by: Sujatha Srinivasan, sujatha@servalis.in

Query : How was it established that POA 10516 has been sufficiently scrutinised for double-counting with reference to two other projects detailed in [www.JuntosNFP.org/projects](http://www.JuntosNFP.org/projects) that have the same stove by the same implementation partner that sells what the projects have called "WER carbon offsets".

Supportive evidence:

1 : Declaration made by Dr. Paul Anderson, Executive Director of Juntos NFP, in the enclosed note dated 27 July 2020, wherein he writes, on page 4, last 2 paras as follows : "My frustration with the stoppage and my desire to continue to have additional households demonstrate their acceptance of the TLUD stove technology led me to conduct two separate efforts with Sapient-Infotech as the implementation partner. Both cases use IDENTICALLY MADE Champion TLUD stoves so that the data from the certification and verification of the Champion TLUD for the atmosfair projects could be unofficially used in documentation. Both projects ended because of a combination of insufficient funds to maintain project growth and socio-political strife in India. A. One project was in Darjeeling, northern West Bengal. 2500 stoves. Ended as community revolts arose for separate political representation. B. The second project was in Hingalgaon, southeast West Bengal on the river border with Bangladesh. 750 stoves. Ended when instability arose because of Indian citizenship issues of Muslims without sufficient documentation. This project was owned by Juntos Energy Solutions, NFP, an American non-profit established and administered by me, with inclusion of the CharTrac innovations for carbon accounting and voluntary carbon offsets. Information is available at: [www.JuntosNFP.org/projects](http://www.JuntosNFP.org/projects)."

2 : Dr. Anderson, in a separate email communication, has stated "that project in Hingalgaon has been stopped, but not before Juntos has documentation for about 5000 voluntary WER Woodgas Emission Reductions". (Ref : Dr. Anderson's email to Sujatha Srinivasan dated 21 May, 2020).

Possible impacts triggered by such projects :

- All projects being in the state of WB, under the same implementation partner opens opportunities for "double double counting" and various malpractices that are hard to verify because in all these projects "the witnesses are produced by the project partners" themselves. The ongoing pandemic scenario makes it even harder to ascertain the reality. "Double double counting" means this : (a) The deployed stove has two combustion chambers per stove set; the possibilities of counting each stove set as two different stoves is high; besides the possibility that the same stove set being applied for under three projects in the same area. (b) The stove set with two canisters has only one "top cover" which has the unique id. The top cover is a small, portable part of the stove; that can be manufactured separately. Unless audited with having this understanding in mind, it is possible to be misled into believing that actual stoves have been given when only "top covers" have been given.



- Projects with different funders for the same stove in the same geography with the same implementation partner eventually create projects that are monopolistic in nature, unstable in rigour and sustainability, thereby creating losses for everyone at all levels – by various clashes of interest and conflicts eventually leading to funders getting mistrustful of the activities under all projects and refusing further funding thus denying deserving communities access to clean-tech products.

Submitted by: Sujatha Srinivasan, sujatha@servals.in

Query : (1) Why has this project been awarded to only manufacturer (one who does not hold legitimate title rights to produce) when the more well-established manufacturer (The one who created the stove designs) was not even asked to submit a quote? Who runs the procurement operations for this project? And on what basis? (2) How does this POA/CPA declare compliances under the FEMA act and to the Enforcement Directorate of the host country for the foreign funding that it is bringing into the project based on non-transparent procurement policies?

Supportive evidence for the above query:

1. The cookstove deployed under this POA are the proprietary property of Servals Automation Pvt Ltd. The project partners have used it to run their businesses without permission from Servals, and have been justifying it to be “freeware” when it is illegal and dishonorable to do so. Servals have been contesting their claims under the dispute resolution process that is currently being audited by the consular office. Even before the final verdict and settlement on this has been reached, Atmosfair and Sapient have commenced another project based on false disclosures and CDM governance have not shown itself to be robust enough to verify these, despite Servals having disclosed to UNFCCC and to the DOE that the dispute is still unsettled. All relevant documents have been submitted to CDM team under CME report and consular office communication under CME communication around POA 10292. In the light of this, how does POA 10516 propose to address grievances raised by injured parties – victims of economic crimes such as stealing of intellectual property and victims of product quality defects?

2. The host country has statutory regulations about operations of foreign entities in India, particularly where it involves procurement as it relates to channeling of foreign funds into India. As a case in point, Atmosfair’s candidature for CME was rejected because of the host country laws regulating operations of foreign countries in India. Under such a scenario, how was POA 10516 audited for accountability towards host country stipulations for operations of foreign funders? Host country mandates supercede CDM audits.

Possible impacts triggered by such projects :

1. This is a project implemented by an organisation with a clear blackmark under a similar POA with the same technology and same geography. The nature of the DOE audit and disclosures made available create red flags that can be eventually boomerang on the larger ecosystem – impacting funding, promoting of a clean tech. Non performance of POA-10292 is a case in point. As such POA 10516 does not offer satisfactory evidences regarding the following, particularly if the audit was conducted during the ongoing pandemic scenario.

a. Quality of carbon asset with uncertain quantum of carbon emission; leading to potential safety issues to end users.

b. Unverifiable if the stoves were actually manufactured and deployed other than trusting the stakeholder’s disclosures; leading to potential misuse of donor funds.

c. Unverifiable if the stoves deployed are of double canister or single canister; leading to potential users being cheated. Unverifiable also whether the users were actually given stoves to use or were given only the top-covers that carry the unique id.

2. Allowing such projects to be implemented without sufficient vigilance, counsel, advice and admonition to the CME/Project partners

a. Perpetrates continued economic crimes against minority stakeholders, such as the one under arbitration currently with IGCC - eventually undermining the value of the CDM certification.

b. Encourages the setting up of POAs that purposely sets low quality and technology standards for the communities that it professes to serve, thereby hurting thousands of poor households by giving up projects half way or abandoning projects after starting it. (POA10292 with the same stakeholders is a case in point). It also hurts genuine donors and patrons of climate change who place their trust and money in organisations and UNFCCC auditing processes expecting them to create meaningful projects that result in a

healthy overall improvement spiral.

c. It emboldens the setting up of projects that are designed to suit short term vested interests of foreign funders rather than build a long term sustainable equitable platform that subscribe to the economic philosophy of the host country or to the choices of the local community; Foreign funding entering India to serve grassroots development for a clean mission is good; foreign funding precluding free and fair choices by the community and supporting operations that seek to disrespect host country statutes are not good.

Submitted by: Sujatha Srinivasan, sujatha@servalis.in

#### CME's response

Date: 16/12/2020

Query : POA 10516 is identical to POA10292 in every way. How was it established that POA10516 does not harm the interests of the stakeholders POA10292, including that of the proposed beneficiaries under POA10292.

Supportive evidence to the query :

1. There is no information available on how the following requirement of CDM standards was verified in POA10516 : "CDM Project Standard for PoAs requires that if a proposed project (or CPA) is in the same geographical location as an existing project –The Coordinating and Managing Entity must declare that the proposed project/CPA will not lead to the discontinuation or modification of the former project and does not decrease the GHG emission reductions or net anthropogenic GHG removals by the former project. The UN's Project Standard for PoAs also requires that a new project in the same geography/ same partner utilize both a different measure and a different technology from those of the former project"

#### Response PP:

#### Risk of Discontinuation of the PoA10292:

In respect to the CDM project standard for programmes of activities CDM-EB93-A07-STAN, version 02.0, para 166 the DOE validated the following on page 24-25 of the validation report of the first CPA inclusion:

165. The coordinating/managing entity shall declare, if applicable, the existence of a registered CDM project activity or a CPA under a registered CDM PoA whose crediting period has or has not expired (hereinafter referred to as former project) in the same geographical location as that of the proposed CPA.	For the CME, this is the first project. The validation team confirms the both PoAs (PoA 10516 and PoA 10292) are independent to each other and is mutually exclusive physically.
166. If the coordinating/managing entity identifies that the proposed CPA is in the same geographical location as that of a former project, it shall declare that the proposed CPA will not lead to the discontinuation or modification of the former project and does not decrease the GHG emission reductions or net anthropogenic GHG removals by the former project, and that the proposed CPA complies with the following conditions: (a) It utilizes both a different measure and a different technology from those of the former project; (b) It does not share or utilize any of the assets of the former project; (c) It utilizes a different resource type compared to the former project	This is not applicable as both the PoA are independent to each other and is physically exclusive.
167. The following definitions shall apply for paragraph 166 above: (a) Measure: fuel/feedstock switch, technology switch, methane destruction and methane avoidance; (b) Technology: equipment or conversion process used for the production of goods or provision of services.	Both PoAs are using same measure (technology switch), same technology (microgasifier cook stoves), provide same kind of output (thermal output, charcoal is the by-product). But both the PoAs (PoA 10516 and PoA 10292) are independent to each other and is physically exclusive.

<p>Two different project activities/CPAs are considered to be using the same technology(ies) if they: (i) Provide the same kind of output and use the same kind of equipment and conversion process; or</p> <p>(ii) Undertake the same course of action that results in the same kind of effect (e.g. two projects using the same management practice such as fuel switching);</p> <p>(c) Assets: resources with economic value that an individual, corporation or country owns or controls with the expectation that it will provide future benefit; the assets could be physical such as project equipment, or non-corporeal such as permits and exclusive position in legislation. The definition of assets in this context excludes land;</p> <p>(d) Output: the amount of goods or services produced by a technology;</p> <p>(e) Resource: A source of supply or support needed for the production of an output. It may include categories of goods, energy and energy carriers that are supplied into the project location and are required for the implementation of the project activity/CPA, such as fossil fuel, by-product of a process, biomass, solar, wind, or geothermal heat.</p>	
<p>168. If the proposed CPA involves the implementation of distributed units in households and the conditions referred to in paragraphs 166(a)–(c) above are not met, the coordinating/managing entity shall request a DOE to validate and confirm by other means that the proposed CPA will not lead to the discontinuation or modification of the former project, and does not decrease the GHG emission reductions or net anthropogenic GHG removals by the former project, in accordance with the —CDM validation and verification standard for programmes of activitiesll.</p>	<p>Both the PoAs (PoA 10516 and PoA 10292) are independent to each other and is physically exclusive. So in no way, PoA10516 does not lead to discontinuation PoA10292 or vice-versa.</p>
<p>169. In all other cases, the coordinating/managing entity may submit a communication to the Board to request clarification in accordance with the Procedure: Direct communication with stakeholdersll, prior to the inclusion of the proposed CPA in the registered PoA.</p>	<p>This is not relevant as PoA satisfies the requirement of para 168 above.</p>
<p>Furthermore:</p> <ul style="list-style-type: none"> <li>• According to the registered CPA DD and the report “Access to Clean Cooking Energy and Electricity” from 2018 (provided to the DOE), the penetration rate of improved biomass cookstove or biogas for cooking is 0.77% percent in the project region. The demand for clean cookstoves is unbroken since the beginning of the stoves sales. Thus the number of potential users will not lead to the discontinuation of the former PoA 10292.</li> <li>• The stoves are produced by a different/additional manufacturer. Thus stove production capacities will not lead to the discontinuation of the former PoA 10292.</li> <li>• atmosfair gGmbH as one of the financiers of both PoAs offered the funding for stoves under the PoA10292 to the CME several times (last time in an letter to the CME dated 22.06.2020). Thus</li> </ul>	

finance capacities will not lead to the discontinuation of the former PoA 10292.

- Charcoal collection, payment of users for the produced charcoal is still ongoing in the PoA10292. The demand for collected charcoal from the charcoal end users in excess to the current supply by the projects.

#### **Harm of interests of the stakeholders PoA10292**

The charcoal collection and the payment of users for the produced charcoal is ongoing in the PoA10292. Thus the interests of the stakeholders included in the PoA 10292 are not harmed.

#### **DOE Response:**

The verification team confirms that the two registered PoAs (10292 and 10516) are mutually exclusive. Although the CPAs share common geographical boundaries in between the two PoAs, but the stoves distributed are exclusively distinct which can be confirmed from the unique identification number for each of the stoves along with the end user details maintained by the CME. The verification team confirms that although it utilizes same measure and technology as the other PoA, but it does not share or utilize any of the assets of the former project nor does it utilize the same resource type compared to the former project. The verification team could confirm the above on review of the database for the two PoAs maintained by the PP. The verification team can also confirm that the demand for collected charcoal from the charcoal end uses is in excess of the current supply by the projects and that the demand for cookstoves is high in the regions. The POA does not pool any common resource which may lead to disruption of the other POA (10292).

2. POA 10292 has made no progress at all after the verification audit for CPA1 (by DOE Carbon Check which came under UNFCCC query, unanswered till date); CPA-2 (with no progress on deployment of ICS after registration audit by DOE Earthhood and an initial few deployments); 2 proposed CPAs-3&4 that were commissioned for registration audit with DOE Epic Sustainability was stopped midway during the audit and never pursued by Atmosfair to be rectified.

#### **Response PP:**

The delays of the verification process for CPA1 and validation of CPA 3 and 4 are the result of a dispute between the CME and the financing partner of the PoA 10292. The dispute is ongoing since 08.02.2018 (first notice of the law firm Platinum Partners to contacting Servals regarding the stoppage of the PoA10292) and currently under arbitration by IGCC (Indo-German Chamber of Commerce). The last stove included in the stove database of the PoA 10292 was distributed on 29.11.2017. This was well before the PoA10516 start date on 07.06.2018 and the start of CPA1 implementation of PoA 10516 on 09.10.2018. As such the delay of the PoA10292 implementation and verification is not a result of the implementation of the PoA 10516.

#### **DOE Response:**

The verification team confirms that the two registered PoAs (10292 and 10516) are mutually exclusive and that this verification is independent from the verification and validation processes of the CPAs of PoA10292. Evidence of legal dispute between the CME of PoA 10292 and the financial partners atmosfair was submitted and found to be in order. It could be confirmed that the distributed stoves under the PoA 10292 are operational including the charcoal generation and supply to the end users. DOE could independently confirm that the implementation of the present PoA 10516 does not affect the other PoA 10292.

3. It has already been highlighted to CDM team/DOE Carbon Check that Atmosfair has disputes with one of the project stakeholders of POA 10292 that has not been formally nor legally settled; and which is under arbitration by IGCC (Indo-German Chamber of Commerce) with the notification that disclosures by Atmosfair upon which the audits are made will be unsound, invalid, non-compliant to CDM rules and detrimental to several future stakeholders. We also requested the CDM governing process to withhold submissions from Atmosfair/Sapient if it is around the same technology (TLUD cookstove), until the dispute is formally settled. How was POA 10516 admitted despite such notifications?

#### **Response PP:**

The PoA10516 complies with the CDM requirements as found during validation through an accredited external DOE and was registered by the CDM Executive Board. During the Global Stakeholder Consultation period of the PoA-DD for PoA 10516 (public comment) during the period from 22 June 2019 to 21 July 2019

no queries were raised.

**DOE Response:**

The PoA under verification is a distinct PoA which has been validated and registered under UNFCCC.

Possible impacts triggered by such projects:

1. POA 10516 awards undue and inequitable advantages to its stakeholders catering to vested business interests rather than supporting sustainable community development based on ethical and equitable business practices. Such practices cannot stand up to the tests of public scrutiny and accountability; to the rigours of robust and principled audit nor to host country statutory requirements. In the event of this happening, the stakeholders will abandon the project causing broken promises, trust and reneged contracts to all other stakeholders and to beneficiaries, except to themselves. When such scenarios present themselves, it becomes the responsibility of the governing process to anticipate future tragedies and raise the requisite calls to avert them.

**Response PP:**

As laid out in the PoA DD of the project the PoA 10516 and its included CPA DD of CPA 1 under verification, the project distributes clean cookstove to households in West Bengal. All interested households in a region can purchase the stove for the same reduced price and cede their rights to carbon credits to the CME in exchange. Furthermore the households earn money by selling the charcoal produced by the stoves during the cooking process to the project. All households in the project region are free to purchase a clean cookstove and participate in the charcoal collection process. The Project was validated by an external accredited DOE and was registered by the CDM Executive Board after due review. During the public local stakeholder consultation for the project carried out on 12<sup>th</sup> August 2018, stakeholders were asked about their opinion about the project and no negative inputs were raised by the stakeholders. For both PoAs the Letter of Approvals from the DNA confirm that the projects contribute to the sustainable Development of the country.

The start date of the CPA under verification and start of the sales of stoves under this CPA was 09.10.2018. Till date none of the stakeholders has raised any complaints about the project or expressed the wish to abandon the project, neither during the latest monitoring, nor during the bi-weekly visit of the Field Assistants to collect the charcoal. Also till date none of the stakeholders of the PoA10292 has raised any complaints about the project or expressed the wish to abandon the project. The monitoring results show that 100% of the stove buyers are using their stoves (0% Drop-out rate).

**DOE Response:**

The verification team could confirm the sustainability of the project on review of the LoA issued by the host party DNA, on-site visit interviews with the stakeholders such as end users of stoves, Field Agents involved in the process of collection of charcoal on bi-weekly basis from each of the households, the charcoal buyers. No negative feedback was received by the verification team during the verification of the project and on-site visit interviews. The verification team has verified the fact that household are earning money from the sales of charcoal through interviewing the end user during the on-site visit. DOE also verified that the charcoal collection chain is sustainable and profitable. Documentary evidence and onsite interviews confirmed that no beneficiary had opted out of the project since they were included in the POA thus confirming no abandonment of the project by the beneficiaries i.e. rural households.

2. The poor households that should have been benefited under POA 10292 with better upgraded clean tech have instead been given stoves whose quality is suspect; whose manufacturing practices have not been declared nor audited for quality - thereby questioning their ability to actually reduce emissions, besides making the households pay for products that should/could have been cleaner and healthier for them.

**Response PP:**

The stove technology distributed under the PoA10516 and its implemented CPA was tested by an accredited testing centre (Micro Small and Medium Enterprises testing Centre – formerly regional testing centre government of India) and their efficiency has been certified. The first stoves were sold on 09.10.2018, all stoves are in use and there have been no complaints about the stove quality. All households interviewed during the monitoring and verification of the MP1 confirmed that they receive better air quality and less smoke from the stove. The efficiency tests done during the monitoring show no decrease in the efficiency of

the stoves after two years of usage (28.0% efficiency during initial testing by the MSME and 27.8% efficiency during the first monitoring period), which is an indicator that there is no quality loss of the stoves. All stoves have a two year guarantee from the manufacturer. Therefore there is no indication, that stoves of minor quality are distributed to households under the PoA 10516.

#### **DOE Response:**

The verification team confirms that the stoves distributed under the current PoA under verification fulfil the technology requirements set in the AMS-II.G vers 10.0 since the stoves have an efficiency of over 20%, by reviewing the efficiency test reports of the Micro Small and Medium Enterprises testing Centre, by attending on site water boiling tests and by reviewing the WBT results from the monitoring survey.

Submitted by: Sujatha Srinivasan, sujatha @servals.in

Query : How was it established that POA 10516 has been sufficiently scrutinised for double-counting with reference to two other projects detailed in [www.JuntosNFP.org/projects](http://www.JuntosNFP.org/projects) that have the same stove by the same implementation partner that sells what the projects have called "WER carbon offsets".

Supportive evidence:

1 : Declaration made by Dr. Paul Anderson, Executive Director of Juntos NFP, in the enclosed note dated 27 July 2020, wherein he writes, on page 4, last 2 paras as follows : "My frustration with the stoppage and my desire to continue to have additional households demonstrate their acceptance of the TLUD stove technology led me to conduct two separate efforts with Sapient-Infotech as the implementation partner. Both cases use IDENTICALLY MADE Champion TLUD stoves so that the data from the certification and verification of the Champion TLUD for the atmosfair projects could be unofficially used in documentation. Both projects ended because of a combination of insufficient funds to maintain project growth and socio-political strife in India. A. One project was in Darjeeling, northern West Bengal. 2500 stoves. Ended as community revolts arose for separate political representation. B. The second project was in Hingalganj, southeast West Bengal on the river border with Bangladesh. 750 stoves. Ended when instability arose because of Indian citizenship issues of Muslims without sufficient documentation. This project was owned by Juntos Energy Solutions, NFP, an American non-profit established and administered by me, with inclusion of the CharTrac innovations for carbon accounting and voluntary carbon offsets. Information is available at: [www.JuntosNFP.org/projects](http://www.JuntosNFP.org/projects)."

#### **Response PP:**

As laid out in the PoA DD and CPA DD and as validated by a DOE, to avoid double counting, the stoves distributed under the CPA10516 have unique identifications of product (unique stoves IDs) and in addition the GPS data of the stove users houses (end-user locations) are documented.

Validation report page 34, Appendix 6: Project Standard for PoA v2.0 requirements:

Requirements of project Standard for PoA v2.0	Validation opinion of how requirement of each para of Project Standard for PoA is satisfied.
Conditions to avoid double counting of GHG emission reductions or net anthropogenic GHG removals, such as unique identifications of product and end-user locations (e.g. programme logo);	CME provided agreement between CME and households (end users). One of the clause is about the right to claim carbon credit. As per the agreement, the rights of claim of carbon credit lies with the atmosfair, the PP only. The households cede the rights to the PP as it is subsidising the stoves. The validation team has reviewed sample agreements <sup>77</sup> where stove unique id, date of sale, Name and address of the enduser with GPS are recorded. So double counting is avoided.

The cited project of Dr. Paul Anderson is independent from the PoA10516. The stoves purchased by Dr. Paul Anderson for his projects are not included in the PoA10516. This can be verified by the unique stove IDs and by the end-user location data of the stoves included in the PoA. The project regions, mentioned by Dr. Paul Anderson (Hingalganj and Dajeeling) are not included in the PoA 10516 database. Furthermore

the stoves IDs given for these projects have stove IDs starting with the letters "JU". No stove with such stove ID is included in the Project database.

**DOE Response:**

The verification team confirms that the considered PoA (10516) under current verification is a distinct and exclusive from all other projects. Although this PoA may share common geographical boundaries with other projects, but the stoves distributed are exclusively distinct which can be confirmed from the unique identification number for each of the stoves along with the end user details maintained by the CME. The verification team could confirm the above on review of the database for the two PoAs maintained by the PP and by interviewing Dr. Paul Anderson, who confirmed that the stoves for his project have distinct stove IDs starting with the Prefix "JU". No such stoves are included in the stove database.

2 : Dr. Anderson, in a separate email communication, has stated "that project in Hingalganj has been stopped, but not before Juntos has documentation for about 5000 voluntary WER Woodgas Emission Reductions". (Ref : Dr. Anderson's email to Sujatha Srinivasan dated 21 May, 2020).

**Response PP:**

Please see above, the stoves included in the cited project of Dr. Paul Anderson are not included in the PoA10516. Therefore no CERs will be claimed for these stoves. No double counting, or double claiming of emission reductions as CERs and WERs is thus possible.

**DOE Response:**

The verification team could confirm that the stoves purchased by Dr. Paul Anderson have distinct stove IDs, which are not included in the database. Thus no double counting from these stoves can occur.

Possible impacts triggered by such projects :

- All projects being in the state of WB, under the same implementation partner opens opportunities for "double double counting" and various malpractices that are hard to verify because in all these projects "the witnesses are produced by the project partners" themselves. The ongoing pandemic scenario makes it even harder to ascertain the reality. "Double double counting" means this : (a) The deployed stove has two combustion chambers per stove set; the possibilities of counting each stove set as two different stoves is high; besides the possibility that the same stove set being applied for under three projects in the same area. (b) The stove set with two canisters has only one "top cover" which has the unique id. The top cover is a small, portable part of the stove; that can be manufactured separately. Unless audited with having this understanding in mind, it is possible to be misled into believing that actual stoves have been given when only "top covers" have been given.

**Response PP:**

Please see above the response on general procedures to avoidance of double counting.

Regarding double counting of carbon emission reductions when one stove set is used for 2 households:

1. The stove is a batch fed stove type and two batches (= canisters) are needed to cover the needs for energy for the cooking habits of the region. Thus a stove with only one canister is not of use for the households.
2. Each stove set has only one unique stove ID. The user who purchased the stove set signs an end user agreement including the users location and the unique stove ID. Only this user's data are entered in the database together with the stove ID. Thus the emission reductions generated by this one user will be accounted for, even if the stove is shared by several households.
3. There is no double counting of emission reductions in the case that two households share one stove set, since the emission reductions are accounted for the wood savings during the cooking of each household. The monitoring questionnaire does document the exact number of days in a week and the number of cooking tasks per day for which the stove is used by the household.
4. The generation of false stove IDs, false end user agreements and false database entries is avoided by the due verification of the project and the audits of accredited DOEs.

Regarding double counting of carbon emission reductions when one stove set is used in three projects in the region:

This case cannot occur. Each stove has a unique stove ID and in addition the end user location is recorded

for each stove ID. Therefore the same stove ID and end user location cannot be used for different projects.

**DOE Response:**

The verification team confirms that the considered PoA (10516) under current verification is distinct and exclusive from all other projects. The provisions regarding double counting are robust, since every stove has a unique identification number and the location of each user household related to one stove ID is documented via GPS data. The verification team could confirm this by interviewing the implementation partner for all the three projects in the region and review of the project database. The verification team could confirm the number of stoves implemented in the CPA during the monitoring period during the on-site visit interviews, database check and visits to the sample end users and can confirm that each user had double canister and a top-cover and each stove having a unique ID.

- Projects with different funders for the same stove in the same geography with the same implementation partner eventually create projects that are monopolistic in nature, unstable in rigour and sustainability, thereby creating losses for everyone at all levels – by various clashes of interest and conflicts eventually leading to funders getting mistrustful of the activities under all projects and refusing further funding thus denying deserving communities access to clean-tech products.

**Response PP:**

The PoA is open to several stove technologies, distributors, funders and to all regions in India. It does not provide any exclusivity for stove producers or stove distributors.

Please see:

PoA DD section A1 b) "Other partners like stove manufacturers, stove distributors, charcoal managers etc. may be included."

PoA DD section A2: "The PoA will be located in India, the boundary of the PoA being identical to the political boundaries of the Republic of India."

PoA DD section A3: "The PoA is generally open for different technologies that allow energy efficient cooking with biomass."

PoA DD section Section B: "Sapient Infotech (Sapient) will be one of the producers of the TLUD and probably the main distributor of ICS, however the PoA is open for several partners including stove manufacturers and stove distributors. atmosfair will probably provide funding and receive CERs, and also provide support with CDM matters and the coordination with the DOE and UNFCCC."

**DOE Response:**

The verification team could confirm the sustainability of the project and the satisfaction of the end users with the product during on-site visit interviews with the stakeholders such as end users of stoves. No negative feedback was received by the verification team during the verification of the project and on-site visit interviews. The verification team confirms that the PoA is open for several stoves technologies, distributors and funders by review of the PoA DD, and by interviews with the stove producer and stove distributor Sapient Infotech and with the main funder and PP atmosfair gGmbH. Review of contract between the funder atmosfair gGmbH and Sapient Infotech, confirms that Sapient is one of the stove supplier and distributor and atmosfair has the right to select any other stove supplier and distributors as they deemed fit for the project.

Submitted by: Sujatha Srinivasan, sujatha@servals.in

Query : (1) Why has this project been awarded to only manufacturer (one who does not hold legitimate title rights to produce) when the more well-established manufacturer (The one who created the stove designs) was not even asked to submit a quote? Who runs the procurement operations for this project? And on what basis? (2) How does this POA/CPA declare compliances under the FEMA act and to the Enforcement Directorate of the host country for the foreign funding that it is bringing into the project based on non-transparent procurement policies?

Supportive evidence for the above query:

1. The cookstove deployed under this POA are the proprietary property of Servals Automation Pvt Ltd. The project partners have used it to run their businesses without permission from Servals, and have been justifying it to be "freeware" when it is illegal and dis honourable to do so. Servals have



been contesting their claims under the dispute resolution process that is currently being audited by the consular office. Even before the final verdict and settlement on this has been reached, Atmosfair and Sapient have commenced another project based on false disclosures and CDM governance have not shown itself to be robust enough to verify these, despite Servals having disclosed to UNFCCC and to the DOE that the dispute is still unsettled. All relevant documents have been submitted to CDM team under CME report and consular office communication under CME communication around POA 10292. In the light of this, how does POA 10516 propose to address grievances raised by injured parties – victims of economic crimes such as stealing of intellectual property and victims of product quality defects?

#### **Response of PP:**

The CME is free to choose the project partners. The stove manufacturer holds an official Free to Operate Certificate from a consultancy specialized on patent rights in India and thus the legal right to produce the stoves. Furthermore a letter from the original stove designer Dr. Paul Anderson (Dr. TLUD) from 27<sup>th</sup> July 2020 states that *“Therefore, to the best of my knowledge the Champion TLUD Micro gasifier cookstove is a free ware and anyone in the world can manufacture it”*.

The PoA10516 complies with the CDM requirements, which was validated by an accredited external DOE and was finally registered by the CDM Executive Board. During the Global Stakeholder Consultation period of the PoA-DD for PoA 10516 (public comment) during the period from 22 June 2019 to 21 July 2019 no queries were raised.

#### **DOE Response:**

Sapient Infotech holds a Free To Operate report done by a reputed third party patent consultant (IP Flair which has the Registered Indian Patent Agents, authorized by the Government of India) proving that his cook stove has no patents. The verification team further reviewed a letter dated 27<sup>th</sup> July 2020 from Paul Anderson in this respect which states:

*“I made no formal obligations to them (Servals) nor them to me; we all spoke and understood that there was no exclusivity given to Servals for using my stove concepts, and that any advancements Servals made could be freely utilized by me or by others who might want to make the stove.*

*Mr. Mukundan understood that my conceptual design and even the copying of how Servals had made it of those steel components could be freely copied by others anywhere in the world. He did not mention and never did seek any form of design patent or utility patent for the efforts by Servals. Although unspoken, it is common knowledge that to try to enforce patent rights concerning low cost items made for sale to extremely impoverished people has a near-zero probability of recovering even the cost of the enforcement efforts. Mr. Mukundan and I spoke of our mutual desire to bring benefits to highly disadvantaged people.*

*I cannot envision any circumstances in which any person or entity could claim proprietary rights to any aspect (except perhaps some unique innovation in 2019 - 20) to the TLUD cookstove technology, and especially about something that has clearly existed and is basically unchanged since 2009. Therefore, to the best of my knowledge the Champion TLUD Micro gasifier cookstove is a free ware and anyone in the world can manufacture it”*.

The above facts could also be verified by a telephonic interview with Paul Anderson by the verification team on 21/12/2020.

DOE has studied the patents applied for under the Indian Patents act 1970 and the Patents rules, 2003 and found Application number 201841010311 filed on 21/03/2018 by Mr. Rajan Philip for low emission domestic cook stoves. The said application has been deemed to be abandoned under section 21(1) of the patents law 1970. Thus, no Patents were found to have been granted to any such ICS akin to the ones installed under the project activity.

PP has confirmed to the DOE that there has not been any FEMA violation in the project due to receipt of foreign remittance in the project and no such proceeding under Enforcement department is underway for that matter.

1. The host country has statutory regulations about operations of foreign entities in India, particularly where it involves procurement as it relates to channeling of foreign funds into India. As a case in point, Atmosfair's candidature for CME was rejected because of the host country laws regulating

operations of foreign countries in India. Under such a scenario, how was POA 10516 audited for accountability towards host country stipulations for operations of foreign funders? Host country mandates supersede CDM audits.

**Response of PP:**

The CME of the PoA10516 is the Nature Club of Rajasthan. atmosfair provides finance for the project from donations by companies and private persons, such that no ODA money is involved. In line with FEMA, the project partners involved have transparent contracts, all invoices are raised based on these contracts and all payments are done based on these invoices.

The project holds the Letter of Approval from the Indian DNA. Thus confirming the compliance of the project with the host country mandates and that the PoA contributes to the Sustainable Development in India.

**DOE Response:**

The verification team confirms that the CME of the PoA is Nature Club of Rajasthan, an organisation based in India. This could be verified by an interview with the project representative of the CME Mr. Hitesh Goyal. The verification team reviewed the contracts between the project parties and confirms their transparency. Furthermore, the PoA 10516 has obtained LoA from the host party DNA and registered with UNFCCC. Sapient Infotech (who is the project implementer in the host country contracted by the PP atmosfair), has also provided a declaration that there is no FEMA violation due to the receipt of foreign remittance in the project. Thus it can be confirmed that the receipt and disbursement of the foreign remittance is as per the law of the land.

Possible impacts triggered by such projects :

1. This is a project implemented by an organisation with a clear blackmark under a similar POA with the same technology and same geography. The nature of the DOE audit and disclosures made available create red flags that can be eventually boomerang on the larger ecosystem – impacting funding, promoting of a clean tech. Non performance of POA-10292 is a case in point. As such POA 10516 does not offer satisfactory evidences regarding the following, particularly if the audit was conducted during the ongoing pandemic scenario.

- a. Quality of carbon asset with uncertain quantum of carbon emission; leading to potential safety issues to end users.

**Response of PP:**

Carbon emission reductions have been calculated according to the CDM rules as laid out in the registered CPA DD and the applied methodologies. ER calculations have been monitored and verified by an external accredited DOE.

No health issue have been found during monitoring and verification of the project, in contrast, all stove users reported a reduction in smoke development during cooking. The non-performance of the PoA10292 is not a result of the implementation of the PoA 10516, please see PPs response to the first part of the stakeholder input.

**DOE Response:**

The verification team could confirm that the emission reduction calculations are as per the registered CPA DD and the applied methodologies. All parameter values have been reviewed and could be verified by the verification team. The sustainability of the project was reviewed through on-site visit interviews with the stakeholders such as end users of stoves, Field Agents involved in the process of collection of charcoal on bi-weekly basis from each of the households, the charcoal buyers. No negative feedback was received by the verification team during the verification of the project and on-site visit interviews. All interviewed stakeholders mentioned positive health effects, like less smoke development. No potential safety issues could be detected by the verification team.

- b. Unverifiable if the stoves were actually manufactured and deployed other than trusting the stakeholder's disclosures; leading to potential misuse of donor funds.

**Response of PP:**

The number of stoves manufactured is documented by invoices from financiers to the stove manufacturers and the inventory lists of the manufacturer. During the monitoring and verification, the number of stoves

implemented under the project is monitored and verified by the accredited DOE. The project follows the Sampling and surveys for CDM project activities and programmes of activities and the CDM validation and verification standard for programmes of activities during the monitoring and the verification to ensure that the reported implemented stove numbers are correct.

**DOE Response:**

The verification team could confirm the number of stoves implemented during the monitoring period during the on-site visit interviews, database check and visits to the sample end users. The verification team found no discrepancies or inconsistencies in the database and thus confirms the number of stoves implemented.

- c. Unverifiable if the stoves deployed are of double canister or single canister; leading to potential users being cheated. Unverifiable also whether the users were actually given stoves to use or were given only the top-covers that carry the unique id.

**Response of PP:**

Regarding double counting of carbon emission reductions when one stove set is used for 2 households:

1. The stove is a batch fed stove type and two batches (= canisters) are needed to cover the needs for energy for the cooking habits of the region. Thus a stove with only one canister is not of use for the households.
2. Each stove set has only one unique stove ID. The user who purchased the stove set signs an end user agreement including the users location and the unique stove ID. Only this user's data are entered in the database together with the stove ID. Thus the emission reductions generated by this one user will be accounted for, even if the stove is shared by several households.
3. There is no double counting of emission reductions in the case that two households share one stove set, since the emission reductions are accounted for the wood savings during the cooking of each household. The monitoring questionnaire does document the exact number of days in a week and the number of cooking tasks per day for which the stove is used by the household.
4. The generation of false stove IDs, false end user agreements and false database entries is avoided by the due verification of the project and the audits of accredited DOEs.

**DOE Response:**

The verification team could confirm that two canisters are needed to satisfy the cooking needs of one household. The provisions regarding double counting are robust, since every stove has a unique identification number and the location of each user household related to one stove ID is documented via GPS data. The verification team could confirm the number of stoves implemented in the CPA during the monitoring period and can confirm that each user had double canister and a top-cover and each stove having a unique ID. This was verified during the on-site visit interviews, database check and visits to the sample end users.

2. Allowing such projects to be implemented without sufficient vigilance, counsel, advice and admonition to the CME/Project partners
  - a. Perpetrates continued economic crimes against minority stakeholders, such as the one under arbitration currently with IGCC - eventually undermining the value of the CDM certification.

**Response of PP:**

The PoA10516 complies with the CDM requirements by an accredited external DOE and was finally registered by the CDM Executive Board. During the Global Stakeholder Consultation period of the PoA-DD for PoA 10516 (public comment) during the period from 22 June 2019 to 21 July 2019 no queries were raised.

The PoA follows the "CDM project cycle procedure for programmes of activities", where the procedures for the global stakeholder consultation during validation and verification process are laid down. All stakeholder inputs are duly answered by the CME/PP and the answers are verified by the accredited DOE.

There is an arbitration process regarding PoA10292, which shows that grievance raised by stakeholders are attended and taken seriously.

**DOE Response:**

The verification team confirms that the two registered PoAs (10292 and 10516) are mutually exclusive and that this verification is independent from the verification and validation processes of the CPAs of PoA10292. The verification team conducted the verification of this project according to the CDM validation and verification standard for programmes of activities and came to the opinion that there is no case of harm of intellectual property by the project and the stoves manufacturer has the right to produce the stoves, as laid out in our response above.

- b. Encourages the setting up of POAs that purposely sets low quality and technology standards for the communities that it professes to serve, thereby hurting thousands of poor households by giving up projects half way or abandoning projects after starting it. (POA10292 with the same stakeholders is a case in point). It also hurts genuine donors and patrons of climate change who place their trust and money in organisations and UNFCCC auditing processes expecting them to create meaningful projects that result in a healthy overall improvement spiral.

#### **Response of PP:**

The technology implemented under the PoA was certified for the efficiency by the Micro Small and Medium Enterprises testing Centre – formerly regional testing centre government of India. No drop outs have been monitored since the start of implementation of the project, indicating the high quality of distributed technologies and stakeholder satisfaction.

Under the PoA10292 the charcoal collection as well as sales service for included households is still ongoing, thus the stakeholders are not abandoned and do not abandon the project. atmosfair gGmbH as one of the financiers of both PoAs offered the funding for stoves under the PoA10292 to the CME several times (please also see response to the queries raised in the first part of the stakeholder input).

#### **DOE Response:**

The PoA 10516 has obtained LoA from the host party DNA and registered with UNFCCC with the TLUD technology stoves. The stoves distributed under the CPA fulfil the technology requirements set in the AMS-II.G vers 10.0 since the stoves have an efficiency of over 20%, by reviewing the efficiency test reports of the Micro Small and Medium Enterprises testing Centre, by attending on site water boiling tests and by reviewing the WBT results from the monitoring survey. The verification team could confirm the sustainability of the project and the satisfaction of the end users with the product during on-site visit interviews with the stakeholders such as end users of stoves. No negative feedback was received by the verification team during the verification of the project and on-site visit interviews. The verification team confirms that there is 100% usage of the stoves distributed under the project.

- c. It emboldens the setting up of projects that are designed to suit short term vested interests of foreign funders rather than build a long term sustainable equitable platform that subscribe to the economic philosophy of the host country or to the choices of the local community; Foreign funding entering India to serve grassroots development for a clean mission is good; foreign funding precluding free and fair choices by the community and supporting operations that seek to disrespect host country statutes are not good.

Submitted by: Sujatha Srinivasan, sujatha@servals.in

#### **Response of PP:**

atmosfair and the CME, the Nature Club of Rajasthan are both not for profit organisations. They do thus not have a financial/economic interest in the project but seek to contribute to climate protection and sustainable development in India. The project set-up is designed in a way that ensures long term benefits for the households included under the project, especially through the establishment of the charcoal collection chain, which ensures an additional financial income for the included households. Once the charcoal chain is fully set-up in a project region it shall become financially viable and thus will not need subsidies from the project. Thus benefits created for the households by the sales of the charcoal are independent from the generation of CERs in the long term.

Furthermore, the DNA approval of the host country certifies that the project supports the sustainable development of the country and stakeholders have expressed their support for the project in the local stakeholder consultation.

#### **DOE Response:**

<p>The PoA 10516 has obtained LoA from the host party DNA confirming that the project supports the sustainable development of the country.</p> <p>The sustainability of the project was reviewed through the review of the LoA, through on-site visit interviews with the stakeholders such as end users of stoves, Field Agents involved in the process of collection of charcoal on bi-weekly basis from each of the households, the charcoal buyers. No negative feedback was received by the verification team during the verification of the project and on-site visit interviews. The verification team has verified the fact that household are earning money from the sales of charcoal through interviewing the end user during the on-site visit. DOE also verified that the charcoal collection chain is sustainable and profitable.</p>	
<b>Documentation provided by CME</b>	
<ul style="list-style-type: none"> <li>- Letter to the CME of PoA10292 from 22.06.2020 regarding the funding offer</li> <li>- First notice of the law firm Platinum Partners to contacting Servals regarding the stoppage of the PoA10292</li> <li>- Stove database PoA 10292</li> <li>- Efficiency test report issued by Micro Small and Medium Enterprises testing Centre</li> <li>- Letter from the original stove designer Dr. Paul Anderson (Dr. TLUD) from 27<sup>th</sup> July 2020</li> <li>- Free To Operate report for the stove production</li> <li>- Contract between stove producer and distributor and atmosfair gGmbH</li> <li>- Declaration by Sapient Infotech for non violation of any FEMA regulation</li> </ul>	
<b>DOE assessment</b>	<b>Date:</b> 19/12/2020
DOE's response has been provided against each of the CME's response in the above row.	

Table 3. CARs from this verification

<b>CAR ID</b>	01	<b>Section no.</b>	E.1.1	<b>Date:</b> 25/11/2020
<b>Description of CAR</b>				
Section C.1 and C.2 of the MR do not comply with the MR completing guidelines.				
<b>CME's response</b>				<b>Date:</b> 16/12/2020
PP corrected the information in section Section C.1 and C.2 of the MR to comply with the MR completing guidelines.				
<b>Documentation provided by CME</b>				
Revised MR				
<b>DOE assessment</b>				<b>Date:</b> 19/12/2020
CME has revised section C.1 and C.2 of the MR complying the MR completing guidelines. The CAR is closed.				

<b>CAR ID</b>	02	<b>Section no.</b>	E.3.4.1	<b>Date:</b> 25/11/2020
<b>Description of CAR</b>				
Value for the parameter "EF <sub>projected_fossilfuel</sub> " used in the ER calculation is 63.71 whereas the included CPA-DD and the applied meth specifies this as 63.7. CME needs to clarify.				
<b>CME's response</b>				<b>Date:</b> 16/12/2020
PP corrected the value for the parameter "EF <sub>projected_fossilfuel</sub> " in the ER spreadsheet to be in line with the CPA DD and the applied Methodology to 63.7.				
<b>Documentation provided by CME</b>				
ER sheet				
<b>DOE assessment</b>				<b>Date:</b> 19/12/2020
CME has submitted revised ER spread sheet applying the value for the parameter "EF <sub>projected_fossilfuel</sub> " as 63.7. The CAR is closed.				

<b>CAR ID</b>	03	<b>Section no.</b>	E.3.4.2	<b>Date:</b> 17/11/2020
<b>Description of CAR</b>				
For the stoves A37275 and A40468, there is error observed in between the hard copy and WBT calculation spread sheet.				
<b>CME's response</b>				<b>Date:</b> 16/12/2020
PP corrected the errors in the WBT calculation spread sheets and the resulting efficiency calculation.				
<b>Documentation provided by CME</b>				
Corrected WBT calculation spread sheets.				
<b>DOE assessment</b>				<b>Date:</b> 19/12/2020
CME has rectified the error and submitted the revised WBT calculation files. Hence the CAR is close.				

<b>CAR ID</b>	04	<b>Section no.</b>	E.3.4.3	<b>Date:</b> 17/11/2020
<b>Description of CAR</b>				
CME needs to clarify on the student's t distribution and precision calculation applied for the mean parameters.				
<b>CME's response</b>				<b>Date:</b> 16/12/2020
PP corrected the student's t distribution and precision calculation according to the calculation spreadsheet provided by the UN. PP corrected the t-value used for the calculation from t-value for 90% confidence interval to 95% confidence interval.				
<b>Documentation provided by CME</b>				
Revised ER spread sheet				
<b>DOE assessment</b>				<b>Date:</b> 19/12/2020
CME has submitted revised student's t distribution and precision calculation applied for the mean parameters which is found to be appropriate. Hence the CAR is closed.				

<b>CAR ID</b>	05	<b>Section no.</b>	E.3.6.1	<b>Date:</b> 25/11/2020
<b>Description of CAR</b>				
The calculated energy savings per stove as 7.24 kWth / annum is incorrect. Also the stated threshold for microscale of 60,000 kWh <sub>thermal</sub> is incorrect.				
<b>CME's response</b>				<b>Date:</b> 16/12/2020
PP corrected the calculated energy savings per stove and the stated microscale threshold for of 60,000 kWh <sub>thermal</sub> .				
<b>Documentation provided by CME</b>				
Revised ER spread sheet				
<b>DOE assessment</b>				<b>Date:</b> 19/12/2020
CME has submitted revised calculation of energy savings in the ER spread sheet which is found to be correct. The CAR is closed.				

Table 4. FARs from this verification

<b>FAR ID</b>	xx	<b>Section No.</b>		<b>Date:</b> DD/MM/YYYY
<b>Description of FAR</b>				
-				
<b>CME response</b>				<b>Date:</b> DD/MM/YYYY
-				
<b>Documentation provided by the CME</b>				
-				
<b>DOE assessment</b>				<b>Date:</b> DD/MM/YYYY
-				

## Appendix 5 Data and parameters fixed ex ante

Parameter	Net calorific value of the non-renewable woody biomass that is substituted ( $NCV_{wood}$ or $NCV_{biomass}$ )
Data unit:	TJ/tonne
Default values used:	0.0156
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /15/.

Parameter	Default net calorific value of charcoal ( $NCV_{charcoal,default}$ )
Data unit:	GJ/tonne
Default values used:	29.5
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /15/.

Parameter	Fraction of woody biomass saved by the project activity in period y that can be established as non-renewable biomass ( $f_{NRB,y}$ )
Data unit:	Percentage
Default values used:	87.18% (value for West Bengal)
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /15/.

Parameter	Emission factor for the fossil fuels projected to be used for substitution of non-renewable woody biomass by similar consumers ( $EF_{projected\_fossilfuel}$ )
Data unit:	TJ/tonne
Default values used:	63.7
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /15/.

Parameter	Leakage adjustment factor period y ( $L_y$ )
Data unit:	Fraction
Default values used:	0.95
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /15/.

Parameter	Conversion factor fuelwood to conventional charcoal ( $CF$ )
Data unit:	-
Default values used:	6
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /15/.

Parameter	Global warming potential of methane ( $GWP_{CH_4}$ )
Data unit:	t CO <sub>2</sub> e/t CH <sub>4</sub>
Default values used:	25
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /15/.

Parameter	Specific methane generation for the baseline charcoal generation process in the year y ( $SMG_{y,b}$ )
Data unit:	t CO <sub>2</sub> e/t CH <sub>4</sub>
Default values used:	0.030
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /15/.

Parameter	Factor to account for any legal requirement for capture and destruction of methane in the charcoal production facility ( $M_d$ )
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Data unit:	t CH <sub>4</sub> /t
Default values used:	0
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /15/.



## Appendix 6 Data and parameters monitored

Monitoring Parameter Requirement	Assessment/ Observation by the DOE														
Data / Parameter: (as in monitoring plan of CPA-DD):	Quantity of woody biomass used by project devices in tonnes per project device ( $B_{y=1,new,survey}$ )														
Measuring frequency/Time Interval:	Annual														
Reporting frequency:	Annual														
Reported value:	1.736 tonnes wood/year														
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes														
Details of monitoring equipment:	<p>This parameter value is calculated as below:  <math>B_{y=1,new,survey} = fillings_{y=1} * load_{y=1} * 0.052</math>            (conversion factor to from kg /week to t/a)  <math>fillings_{y=1}</math>, was determined using the questionnaires and no monitoring equipment was used.  <math>load_{y=1}</math>, the average weight of a TLUD fuelwood load was determined by applying the average value obtained over all WBTs conducted to determine <math>\eta_{new,j}</math>.            This parameter was determined using a weighing balance during sampling.</p> <table border="1"> <tr> <td></td><td><u>Weigh Balance</u></td></tr> <tr> <td>Type/Name</td><td>Simandar Technology/ Shri Sai</td></tr> <tr> <td>Accuracy class</td><td>+/- 0.5 gm</td></tr> <tr> <td>Serial number</td><td>3330</td></tr> <tr> <td>Calibrating agency</td><td>Controller of Legal Metrology</td></tr> <tr> <td>Calibration date</td><td>05/02/2020</td></tr> <tr> <td>Validity of calibration</td><td>05/02/2021</td></tr> </table>		<u>Weigh Balance</u>	Type/Name	Simandar Technology/ Shri Sai	Accuracy class	+/- 0.5 gm	Serial number	3330	Calibrating agency	Controller of Legal Metrology	Calibration date	05/02/2020	Validity of calibration	05/02/2021
	<u>Weigh Balance</u>														
Type/Name	Simandar Technology/ Shri Sai														
Accuracy class	+/- 0.5 gm														
Serial number	3330														
Calibrating agency	Controller of Legal Metrology														
Calibration date	05/02/2020														
Validity of calibration	05/02/2021														
Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	No accuracy of equipment is not stated in the CPA-DD. The monitoring equipment represent good monitoring practise as the equipment is calibrated by the PP.														
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	The equipment used has valid calibration certificate for the monitoring period.														
Is the calibration interval in line with the monitoring plan of the CPA-DD? If the CPA-DD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	The calibration interval has not been provided in the CPA-DD. However, the selected frequency represent good monitoring practise.														
Company performing the calibration (internal or external calibration):	External.  The weighing balance has been calibrated by Legal Metrology Department, Government of West Bengal, India.														
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Yes														
Is (are) calibration(s) valid for the whole reporting period?	Yes														
If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data in MR has been compared with monitoring survey records /5/ and the ER sheet /4/.														
How were the values in the monitoring report verified?	The values in the monitoring report /2/ were compared against the values in ER sheet /4/ and the survey records /5/. The values obtained by the PP														

	through sampling were compared with the DOE's sampling during the site visit. The results of the sampling have been assessed in the section D.4 and E.3.4.3 of this report.
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, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are 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

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Data / Parameter: (as in monitoring plan of CPA-DD):	Efficiency of the baseline system being replaced ( $\eta_{old}$ )
Measuring frequency/Time Interval:	Fixed for each individual household when included in the project activity database
Reporting frequency:	Fixed for each individual household when included in the project activity database
Reported value:	0.10
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	According to AMS II.G, ver. 10, Table 17, a default value of 0.10 can be used, if the "pre-project device, which is a three stone fire using firewood (not charcoal), or a conventional device with no improved combustion air supply or flue gas ventilation, that is without a grate or a chimney". In the end user agreement the type of baseline stove used by each of the households is captured which is traditional fire wood stove in all the cases. This was further confirmed during the baseline surveys which could be confirmed by the verification team during the on-site visit.
Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD 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 CPA-DD? If the CPA-DD 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	Yes, the reported data in MR has been compared

cross-checked with other available data?	with end user agreements / sales receipts /8/, monitoring survey records /5/ and the ER sheet /4/.
How were the values in the monitoring report verified?	The values in the monitoring report /2/ were compared against the values in ER sheet /4/, the survey records /5/ and end user agreements / sales receipts /8/.
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, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are 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

Monitoring Parameter Requirement	Assessment/ Observation by the DOE																												
Data / Parameter: (as in monitoring plan of CPA-DD):	Efficiency of the device of each type <i>i</i> and batch <i>j</i> implemented as part of the project activity. calculated without accounting for the remaining charcoal ( $\eta_{new,j}$ )																												
Measuring frequency/Time Interval:	Annually																												
Reporting frequency:	Annually																												
Reported value:	27.78%																												
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes																												
Details of monitoring equipment:	<p>The stove efficiency testing has been determined by WBTs conducted in line with the guidance provided by the CME in the CPA-DD /15/. The monitoring equipment used for conducting the stove efficiencies by WBTs are thermometer, weigh balance and moisture meter. Moisture meter is a self calibrating type as confirmed in its manual. Calibration details of the weigh balance and thermometer are provided below:</p> <table border="1"> <thead> <tr> <th colspan="2">Thermometer</th></tr> </thead> <tbody> <tr> <td>Type/Name</td><td>Digital Thermometer Elanco</td></tr> <tr> <td>Accuracy class</td><td>0.01°C, Temperature range - 50° C - +200° C</td></tr> <tr> <td>Serial number</td><td>T18978</td></tr> <tr> <td>Calibrating agency</td><td>Technocalibration laboratory Pvt. Ltd.</td></tr> <tr> <td>Calibration date</td><td>30/01/2020</td></tr> <tr> <td>Validity of calibration</td><td>29/01/2021</td></tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="2">Weigh Balance</th></tr> </thead> <tbody> <tr> <td>Type/Name</td><td>Simandar Technology/ Shri Sai</td></tr> <tr> <td>Accuracy class</td><td>+/- 0.5 g</td></tr> <tr> <td>Serial number</td><td>3330</td></tr> <tr> <td>Calibrating agency</td><td>Controller of Legal Metrology</td></tr> <tr> <td>Calibration date</td><td>05/02/2020</td></tr> <tr> <td>Validity of calibration</td><td>05/02/2021</td></tr> </tbody> </table>	Thermometer		Type/Name	Digital Thermometer Elanco	Accuracy class	0.01°C, Temperature range - 50° C - +200° C	Serial number	T18978	Calibrating agency	Technocalibration laboratory Pvt. Ltd.	Calibration date	30/01/2020	Validity of calibration	29/01/2021	Weigh Balance		Type/Name	Simandar Technology/ Shri Sai	Accuracy class	+/- 0.5 g	Serial number	3330	Calibrating agency	Controller of Legal Metrology	Calibration date	05/02/2020	Validity of calibration	05/02/2021
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Calibrating agency	Controller of Legal Metrology																												
Calibration date	05/02/2020																												
Validity of calibration	05/02/2021																												
Is accuracy of the monitoring equipment	CPA-DD does not specify the accuracy of the monitoring																												

as stated in the CPA-DD? If the CPA-DD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	equipment. Verification team confirms that the accuracy of the monitoring equipment used represent good monitoring practice based on sectoral expertise.
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	The equipment used has valid calibration certificate for the monitoring period.
Is the calibration interval in line with the monitoring plan of the CPA-DD? If the CPA-DD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	The calibration interval has not been provided in the CPA-DD. However, since the equipment is calibrated prior to use the selected frequency represent good monitoring practise.
Company performing the calibration(internal or external calibration):	External.
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Yes, the calibration confirmed proper functioning of the monitoring equipment.
Is (are) calibration(s) valid for the whole reporting period?	Yes, the calibration is valid for the whole monitoring period.
If applicable, has the reported data been cross-checked with other available data?	Yes, the value of parameter has been crosschecked with the raw data sheets for the WBTs and calculation sheets /11/, ER sheet /4/ and the personnel were interviewed during the OSV.
How were the values in the monitoring report verified?	The reported data has been cross-checked against the raw data sheets for the WBTs and calculation sheets /11/ and compared with the ER sheet /4/ and the MR /2/.
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. As the monitoring parameter under consideration is determined by standardized test procedures (WBT), the QA/QC and calibrations are at the test conduction by the measuring team for WBT. Accordingly, the verification team has focused on abilities, qualifications and recognition of involved personnel and institutions of the measuring team involved in the WBT. The WBT has been carried out by the well-trained personnel and training certificate of the personnel has been provided to the verification team in this respect /9/. The training content /9/ has also been provided to the verification team. The verification team based on on-site interviews and review of competency documents and training records /9/ confirms that the team was qualified to carry out the WBT in line with the protocol.
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

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Data / Parameter: (as in monitoring plan of CPA-DD):	Adjusted total number of ICS of batch j operating during year y ( $N_{y,j}$ )
Measuring frequency/Time Interval:	annual
Reporting frequency:	Yearly

Reported value:	9,671
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	No monitoring equipment is used. The parameter is calculated based on the stoves sales database /6/.
Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	An electronic sales database has been maintained for the project activity
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 CPA-DD? If the CPA-DD 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?	Yes, reported data in MR /2/ has been compared with ER sheet /4/ and the sales database /6/.
How were the values in the monitoring report verified?	The values in the monitoring report /2/ were compared against the values in ER sheet /4/ and the sales database /6/.
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, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. The data collection has been done by the trained individuals /12/ working with the PP and the transfer of data and reporting of emission reductions has been done by the personnel from the project participant, atmosfair gGmbH, project participant involved in multiple PoAs under CDM /B05-1/.
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

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Data / Parameter: (as in monitoring plan of CPA-DD):	Statistically adjusted drop out from total population of ICS in period y ( <b>DO<sub>II,G,y</sub></b> )
Measuring frequency/Time Interval:	Annual
Reporting frequency:	Annual
Reported value:	0
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	NA. Data is collected through sampling questionnaires.
Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD 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 CPA-DD? If the CPA-DD 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?	Yes, the value of parameter has been crosschecked with the sales database /5/, ER sheet /4/ and sample household questionnaires /5/ and the hard copy records were also checked during the OSV.
How were the values in the monitoring report verified?	The reported data has been cross-checked against the questionnaire answers /5/, records in the ER sheet /4/ and compared with the MR /2/.  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, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC process are in place. The data collection has been done by the trained individuals /9/ working with the PP and the transfer of data and reporting of emission reductions has been done by the personnel from the project participant, atmosfair gGmbH, project participant involved in multiple PoAs under CDM /B05-1/
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	NA.

theoretically possible been applied or has a request for deviation been approved?	
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Monitoring Parameter Requirement	Assessment/ Observation by the DOE																																										
Data / Parameter: (as in monitoring plan of PDD):	$Q_{CCP,y}$ Produced quantity of charcoal in year y																																										
Measuring frequency/Time Interval:	Continuously at the time of delivery to charcoal buyers or retailers																																										
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes																																										
Reported value:	3,196.44 tonnes																																										
Details of monitoring equipment:	<p>This parameter was monitored using weighing balances.</p> <table border="1"> <tr> <td></td><td><u>Weigh Balance (Deganga)</u></td></tr> <tr> <td>Type/Name</td><td>AMI</td></tr> <tr> <td>Accuracy class</td><td>Class III</td></tr> <tr> <td>Serial number</td><td>60750201</td></tr> <tr> <td>Calibrating agency</td><td>Controller of Legal Metrology</td></tr> <tr> <td>Calibration date</td><td>05/02/2020</td></tr> <tr> <td>Validity of calibration</td><td>05/02/2021</td></tr> </table> <table border="1"> <tr> <td></td><td><u>Weigh Balance (Uluberia)</u></td></tr> <tr> <td>Type/Name</td><td>B.M. Group, Model BMP III</td></tr> <tr> <td>Accuracy class</td><td>Class III</td></tr> <tr> <td>Serial number</td><td>1625</td></tr> <tr> <td>Calibrating agency</td><td>Controller of Legal Metrology</td></tr> <tr> <td>Calibration date</td><td>24/02/2020</td></tr> <tr> <td>Validity of calibration</td><td>24/02/2021</td></tr> </table> <table border="1"> <tr> <td></td><td><u>Weigh Balance (Purba Medinipur)</u></td></tr> <tr> <td>Type/Name</td><td>Silver Eagle, MMH-PF</td></tr> <tr> <td>Accuracy class</td><td>Class III</td></tr> <tr> <td>Serial number</td><td>E 16429</td></tr> <tr> <td>Calibrating agency</td><td>Controller of Legal Metrology</td></tr> <tr> <td>Calibration date</td><td>03/07/2020</td></tr> <tr> <td>Validity of calibration</td><td>02/07/2021</td></tr> </table>		<u>Weigh Balance (Deganga)</u>	Type/Name	AMI	Accuracy class	Class III	Serial number	60750201	Calibrating agency	Controller of Legal Metrology	Calibration date	05/02/2020	Validity of calibration	05/02/2021		<u>Weigh Balance (Uluberia)</u>	Type/Name	B.M. Group, Model BMP III	Accuracy class	Class III	Serial number	1625	Calibrating agency	Controller of Legal Metrology	Calibration date	24/02/2020	Validity of calibration	24/02/2021		<u>Weigh Balance (Purba Medinipur)</u>	Type/Name	Silver Eagle, MMH-PF	Accuracy class	Class III	Serial number	E 16429	Calibrating agency	Controller of Legal Metrology	Calibration date	03/07/2020	Validity of calibration	02/07/2021
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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?	No accuracy of equipment is not stated in the CPA-DD. The monitoring equipment represent good monitoring practise as the equipment is calibrated by the PP.																																										
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	The equipment used has valid calibration certificate for the monitoring period.																																										
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 calibration interval has not been provided in the CPA-DD. However, the selected frequency represent good monitoring practise.																																										

the selected frequency represent good monitoring practise?	
Company performing the calibration (internal or external calibration):	External Calibration.  Weighing balance has been calibrated by Legal Metrology Department, Government of West Bengal, India.
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Yes, the calibration confirmed proper functioning of the monitoring equipment.
Is (are) calibration(s) valid for the whole reporting period?	Yes, the calibration is valid for the whole monitoring period.
If applicable, has the reported data been cross-checked with other available data?	The value of the parameter has been cross-checked with the total quantity of charcoal generated by the micro gasifiers based on monitored fuelwood consumption and the observed conversion-rate to charcoal. The monitored value of fuelwood consumption per stove is 1.736 tonnes/stove/year. The observed conversion-rate from wood to charcoal from the WBTs conduct is 4.443 kg of wood gives 1 kg charcoal resulting is 0.39 tonnes of charcoal / stove / year ( $=1.736/4.443$ ). The average amounts of charcoal collected from stove users based on records of field assistant collecting charcoal is 0.33 tonnes/stove/year which is less than the value based on monitored fuelwood consumption and the observed conversion-rate (the difference in the value may be due to the losses during charcoal handling / transport).  The cross check has been performed in accordance with the CPA-DD and the values are deemed acceptable to the verification team.
How were the values in the monitoring report verified?	The values in the monitoring report were verified through the review of the collection records and the retailer sales records /19/ and the values are comparable, as demonstrated in the ER sheet /4/.
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, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC process are 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. Full data is available for the monitoring period.

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Data / Parameter: (as in monitoring plan of CPA-DD):	Net calorific value of charcoal type i generated in ICSSs in the project activity ( $NCV_{charcoal}$ )
Measuring frequency/Time Interval:	Monitored once during the first year of the crediting period.
Reporting frequency:	Once during the first year of the crediting period.
Reported value:	29.05 GJ/tonne
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes



Details of monitoring equipment:	The value is provided by an independent accredited laboratory (ESKAPS India Pvt. Ltd.) /17/
Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD 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 CPA-DD? If the CPA-DD 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?	Yes, the value of parameter has been crosschecked with report from an independent accredited laboratory (ESKAPS India Pvt. Ltd.) /17/
How were the values in the monitoring report verified?	The value of parameter has been crosschecked with report from an independent accredited laboratory (ESKAPS India Pvt. Ltd.) /17/
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 value of parameter has been measured by an independent accredited laboratory (ESKAPS India Pvt. Ltd.) /17/
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.

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Data / Parameter: (as in monitoring plan of CPA-DD):	The operating life time of the project device (Life Span)
Measuring frequency/Time Interval:	Fixed and recorded at the time of commissioning
Reporting frequency:	Fixed and recorded at the time of commissioning
Reported value:	7 years
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	NA
Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD 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	NA

guidance / local or national standards / manufacturers specification	
Is the calibration interval in line with the monitoring plan of the CPA-DD? If the CPA-DD 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?	Yes, the reported value is cross checked with the manufacturer's specification /7/
How were the values in the monitoring report verified?	The reported value is cross checked with the manufacturer's specification /7/
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 reported value is cross checked with the manufacturer's specification /7/
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.

<b>Monitoring Parameter Requirement</b>	<b>Assessment/ Observation by the DOE</b>
Data / Parameter: (as in monitoring plan of CPA-DD):	Actual date of commissioning of the project device (Date of commissioning of project device i)
Measuring frequency/Time Interval:	Fixed and recorded at the time of commissioning /distribution
Reporting frequency:	Fixed and recorded at the time of commissioning /distribution
Reported value:	Several dates starting from 10/09/2018 /6/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	No monitoring equipment is used.
Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD 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 CPA-DD? If the CPA-DD 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?	Yes, reported data has been compared with ER sheet /4/ and the sales database /6/.
How were the values in the monitoring report verified?	Yes, reported data has been compared with ER sheet /4/ and the sales database /6/.
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, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are 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

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Data / Parameter: (as in monitoring plan of CPA-DD):	Number of project devices distributed per household ( $N_{d,HH}$ )
Measuring frequency/Time Interval:	Fixed and recorded at the time of commissioning /distribution
Reporting frequency:	Fixed and recorded at the time of commissioning /distribution
Reported value:	1
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	No monitoring equipment is used. The parameter is calculated based on the stoves sales database /6/.
Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD 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 CPA-DD? If the CPA-DD 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?	Yes, reported data in MR /2/ has been compared with ER sheet /4/ and the sales database /6/.
How were the values in the monitoring report verified?	The values in the monitoring report /2/ were compared against the values in ER sheet /4/ and the sales database /6/.
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.

of emission reductions and are 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

## Appendix 7. Assessment of Monitoring parameters monitored through sampling/surveys

SI. No.	Checklist Questions	Assessment															
1.	Does the Monitoring Report apply sampling for determination of ex-post monitoring parameters?	Yes, there are ex-post monitoring parameters determined through the sampling effort.															
2.	Is the applied sampling plan in accordance with the sampling plan proposed in the registered PoA-DD/ PDD?	Yes, the applied sampling plan is in accordance with the sampling plan proposed in the registered PoA-DD / CPA-DD.															
3.	<p>List the parameters determined through sampling and respective parameters of interest.</p> <p>In situations where the monitoring of a parameter is based on data, which is being recorded only once at the time of implementation/distribution particularly for distribution projects, where there are large/dispersed number of project technology, the VV team shall assess the accuracy of such data/information during the onsite verification through document review and where applicable through acceptance sampling.</p> <p>The assessment of implementation status of distribution projects or projects having dispersed and large number of components, it is pertinent that the VV Team shall assess that all physical features (technology, project equipment, and monitoring and metering equipment) of the included CPAs/projects are as specified in the included CPA-DDs/PDD. In cases where the households/users are no longer using the project technology or have voluntarily left the project, it is important for VT to assess CME/PP's QA/QC procedures with regards to handling of its database and where applicable consider those dropped out from technology as a part of assessment of sampling requirements, including acceptance sampling by DOE.</p>	<p>Parameters determined through sampling and respective parameters of interest are:</p> <table> <tr> <th>Parameter</th><th>Description of Parameter</th><th>Parameter of Interest</th></tr> <tr> <td><math>DO_{II,G,y}</math></td><td>Statistically adjusted drop out from total population of ICS in period y</td><td>Proportion</td></tr> <tr> <td><math>fillings_{y=1}</math></td><td>Average number of weekly fillings of a batch-loaded ICS</td><td>Mean</td></tr> <tr> <td><math>load_{y=1}</math></td><td>Average amount of fuelwood used per filling of an ICS</td><td>Mean</td></tr> <tr> <td><math>\eta_{new,j}</math></td><td>Efficiency of the baseline system being replaced</td><td>Mean</td></tr> </table>	Parameter	Description of Parameter	Parameter of Interest	$DO_{II,G,y}$	Statistically adjusted drop out from total population of ICS in period y	Proportion	$fillings_{y=1}$	Average number of weekly fillings of a batch-loaded ICS	Mean	$load_{y=1}$	Average amount of fuelwood used per filling of an ICS	Mean	$\eta_{new,j}$	Efficiency of the baseline system being replaced	Mean
Parameter	Description of Parameter	Parameter of Interest															
$DO_{II,G,y}$	Statistically adjusted drop out from total population of ICS in period y	Proportion															
$fillings_{y=1}$	Average number of weekly fillings of a batch-loaded ICS	Mean															
$load_{y=1}$	Average amount of fuelwood used per filling of an ICS	Mean															
$\eta_{new,j}$	Efficiency of the baseline system being replaced	Mean															
4.	Is the sample size calculated in accordance with the formula presented in the registered PoA-DD/PDD?	Yes, the sample size calculated is in accordance with the formula presented in the PoA-DD/CPA-DDs															
5.	<p>Are the assumptions used for calculation of sample size appropriate and correct?</p> <p>P.S.: Provide assessment on appropriateness of value of proportion (p), standard deviation (STDEV) or variance (v) used for calculation of sample size.</p>	<p>Simple Random Sampling was applied for all the parameters for annually monitoring with 95/10 confidence/precision by the CME for selection of the monitoring samples. The same is deemed acceptable as per the PoA-DD/CPA-DD.</p> <p>The proportion (p), standard deviation (STDEV) or variance (v) used for calculation of sample size are found to be appropriate. All assumptions for the calculation of sample size were used by the CME's experience which</p>															

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		has been checked by the verification team and deemed acceptable.																				
6.	<p>What are the sample sizes obtained for the parameters being monitored? Is the determined sample size deemed adequate for the parameter of interest being monitored?</p> <p>P.S.: If the sample size calculation returns a value of less than 30 samples, a minimum sample size of 30 shall be chosen when the parameter of interest is a proportion. If the parameter of interest is a numeric mean value (i.e. not a proportion or percentage) the Student's t-distribution shall be used if the resulting sample size is less than 30.</p> <p>While assessing the sampling effort by the PP/CME particularly the sample size, the VV Team shall make sure that the reliability criteria (confidence level and precision) should be as per the requirement of the applied methodology. Only when there is no specific guidance in the applied methodology for the sampling requirements, the confidence/precision as stated in the sampling standards should be considered. As a rule of thumb it is to be always kept in mind that the sampling requirements in the applied methodology shall take precedence.</p>	<p>It was found that for all the parameters, the respective confidence/precision was met. The number of samples for each of the parameters covered during the monitoring activity is as given below:</p> <table><tr><td>Parameters</td><td><math>DO_{II,G,y}</math></td><td><math>fillings_{y=1}</math></td><td><math>load_{y=1}</math></td><td><math>\eta_{new,j}</math></td></tr><tr><td>Calculated Sample Size</td><td>21</td><td>12</td><td>7</td><td>7</td></tr><tr><td>Applied Sample Size (to account for non-</td><td>30</td><td>30</td><td>9</td><td>9</td></tr><tr><td>Precision achieved</td><td>0%</td><td>4.24%</td><td>0.50%</td><td>0.56%</td></tr></table> <p>For the mean parameters, t-distribution has been used since the resulting sample size was less than 30.</p> <p>As the actual sample size in all the cases was not less than either the calculated sample size or the minimum sample size as per the PoA-DD/CPA-DD, the sample size covered by the CME was accepted.</p>	Parameters	$DO_{II,G,y}$	$fillings_{y=1}$	$load_{y=1}$	$\eta_{new,j}$	Calculated Sample Size	21	12	7	7	Applied Sample Size (to account for non-	30	30	9	9	Precision achieved	0%	4.24%	0.50%	0.56%
Parameters	$DO_{II,G,y}$	$fillings_{y=1}$	$load_{y=1}$	$\eta_{new,j}$																		
Calculated Sample Size	21	12	7	7																		
Applied Sample Size (to account for non-	30	30	9	9																		
Precision achieved	0%	4.24%	0.50%	0.56%																		
7.	<p>Has reliability specification been applied to determine the sampling requirements for each individual parameter value determined through a sampling effort?</p> <p>P.S.: If there is more than one parameter to be estimated in a CDM project activity, then a sample size calculation should be done for each of them. Then either the largest number for the sample size is chosen for the sampling effort with one common survey, or the sampling effort and survey is repeated for each of the parameters. A random sub-sample within the common survey is allowed as long as: (i) the reliability specification (e.g. 90/10 confidence/precision for small-scale CDM project activities and 95/10 for large scale CDM project activities) is achieved for each individual parameter; and (ii) the random sub-sample is consistent with the design of the survey and the corresponding sample size calculation.</p>	<p>Sampling for all the parameters was done with 95/10 confidence/precision. The necessary confidence / precision of 95/10 for all the parameters are met. This has been cross verified by the verification team from the supporting documents submitted /4/. The number of samples for each of the parameters covered during the monitoring activity is provided in the above row.</p> <p>For the mean parameters, Student's t-distribution has been used since the resulting sample size was less than 30.</p>																				
8.	<p>Is the assumed response rate reasonable (appropriate and correct) for the determination of samples to be surveyed?</p>	<p>Yes, the assumed response rate is reasonable (appropriate and correct) for the determination of samples to be surveyed for each of the parameter of interest.</p>																				
9.	<p>Is the sample selected by PP for determination of the monitored parameters unbiased (random) and representative?</p>	<p>Yes, the verification team, based on evidence for random number generator as provided by the CME, confirms that sample selected by the CME for determination of the monitored parameters are random. It can be considered as representative of the population.</p>																				
10.	<p>Has minimum target level of precision been achieved based on estimates</p>	<p>Yes, the minimum target level of precision been achieved based on</p>																				

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	<p>from the actual samples?</p>	<p>estimates from the actual samples.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <th style="text-align: left;">Parameters</th><th style="text-align: center;"><math>DO_{II,G,y}</math></th><th style="text-align: center;"><math>fillings_{y=1}</math></th><th style="text-align: center;"><math>load_{y=1}</math></th><th style="text-align: center;"><math>\eta_{new,j}</math></th></tr> <tr> <td style="text-align: left;"><b>Required precision</b></td><td style="text-align: center;">10%</td><td style="text-align: center;">10%</td><td style="text-align: center;">10%</td><td style="text-align: center;">10%</td></tr> <tr> <td style="text-align: left;"><b>Precision achieved</b></td><td style="text-align: center;">0%</td><td style="text-align: center;">4.24%</td><td style="text-align: center;">0.50%</td><td style="text-align: center;">0.56%</td></tr> </table> <p style="margin-top: 10px;">This has been checked and confirmed by reviewing Survey database and WBT results provided by the CME.</p>	Parameters	$DO_{II,G,y}$	$fillings_{y=1}$	$load_{y=1}$	$\eta_{new,j}$	<b>Required precision</b>	10%	10%	10%	10%	<b>Precision achieved</b>	0%	4.24%	0.50%	0.56%
Parameters	$DO_{II,G,y}$	$fillings_{y=1}$	$load_{y=1}$	$\eta_{new,j}$													
<b>Required precision</b>	10%	10%	10%	10%													
<b>Precision achieved</b>	0%	4.24%	0.50%	0.56%													
11.	<p>In case the minimum target level of precision has not been achieved based on estimates from the actual samples, please specify the approach adopted by PP to reach the required precision and also justify the appropriateness of the adopted approach in accordance with the applied methodology or paragraph 18 of Sampling and surveys for CDM project activities and programmes of activities (Version 08).</p>	<p>Not applicable since as assessed above the target level of precision has been achieved.</p>															
12.	<p>Has VT applied acceptance sampling to verify that the results of sampling efforts undertaken by PP for determination of ex-post parameters. If yes, please provide a detailed justification of the approach adopted including information on (but not limited to):</p> <ul style="list-style-type: none"> <li>(a) Selected AQL Level</li> <li>(b) Selected UQL Level</li> <li>(c) Selected Consumer Risk Level</li> <li>(d) Selected Producer Risk Level</li> <li>(e) Sample Size chosen for acceptance sampling</li> <li>(f) Acceptance number (c)</li> </ul> <p>Approach adopted by VT to in case value of greater than c discrepant records were observed in the sample</p>	<p>In line with paragraph 26 of the Sampling Standard, the verification team has applied a sampling approach as part of verification. Now as the CME had applied sampling approach, the verification team has chosen acceptance sampling for the parameters in accordance with paragraph 28 of the sampling standard /B07/.</p> <p>In line with paragraph 26 of the Sampling Standard, the verification team has applied a sampling approach for on-site visit interviews as part of verification. Now as the CME had applied sampling approach, the verification team has chosen acceptance sampling in accordance with paragraph 28 of the sampling standard /B07/.</p> <p>DOE used sampling during verification for checking the reported values for the monitoring parameters to check the operational status, fillings sizes, load sizes and to check if the WBT tests have been done in the households. As per the sampling standard /B07/, DOE had identified 18 samples out of the PP's 30 samples for the parameters <math>DO_{II,G,y}</math>, and <math>fillings_{y=1}</math> and confirmed all the 9 samples for the parameters <math>load_{y=1}</math> and <math>\eta_{new,j}</math> based on the AQL/UQL stated below. A sample size of 18 was required, based on an AQL of 1 % and UQL of 20 %, the producer risk used is 10 % and consumer risk used was 10 %. Acceptance number (c) thus determined for the sample is 1. All the identified 18 samples had the same operational status, average load sizes and fillings as reported in the sampling frame of the CME and hence no discrepancy was found (i.e. <math>c=0</math>). All the households sampled for the monitoring parameter <math>\eta_{new,j}</math> confirmed that the WBT tests were conducted on the stoves from those</p>															

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		households. Thus, PP's set of records has been accepted in line with §32 of the sampling standard (version 08.0) /B07/. Verification team has cross verified these sample documents.
13.	Are the procedures for the selected survey and data collection method unambiguously defined and do they adequately provide for minimizing non-sampling errors?	Verification team based on on-site visit interviews and review of documented procedure confirms that the selected survey and data collection method is unambiguously defined. This also adequately ensure minimizing non-sampling errors.
14.	Have potential sources of bias inherent in the selected data collection method, such as self-selection and under-coverage, been anticipated? Have mechanisms for mitigating these been considered?	Review of sampling records, documented procedure and on-site visit interviews with the personnel conducted WBT/Surveys does not any reveal sources of bias inherent in the selected data collection.
15.	Is the quality control and assurance strategy adequate?	Verification team based on review of provided supporting documents and on-site visit interviews confirms that the quality control and assurance strategy is adequate.
16.	Are the proposed skill sets, qualifications and experience of the personnel/institutions engaged to conduct the standardized tests/data collection exercise adequate?	<p>Monitoring parameters <math>DO_{II,G,y}</math> and <math>fillings_{y=1}</math> are monitored through monitoring sample surveys. Monitoring parameters <math>\eta_{new,y}</math> and <math>load_{y=1}</math> are monitored through conducting water boiling tests. As the monitoring parameter under consideration (Thermal efficiency of the stoves) is determined by standardized test procedures, the QA/QC and calibrations are at the test conduction by the measuring team.</p> <p>Accordingly, the verification team has focused on abilities, qualifications and recognition of involved personnel and institutions of the measuring team involved in the WBT. Competence / training evidence of the monitoring personnel have been provided to the verification team. During the on-site visit interviews it was confirmed that the team was qualified as confirmed by reviewed training / competency documents and trained to carry out WBT in line with the protocol. The monitoring equipment used for conducting the stove efficiency tests are thermometer, weighing scale and moisture meter. These equipment are duly calibrated and hence deemed to be acceptable.</p>
17.	<p>Does the PP have a process in place to ensure data quality is maintained to a high standard? This should include:</p> <ol style="list-style-type: none"> <li>Are the personnel trained and experienced?</li> <li>What is the level of supervision and guidance provided to staff?</li> <li>Is there a standardized system for data entry and analysis to produce final result?</li> <li>Is there a system or process in place to minimize the introduction of errors?</li> <li>Is there a system in place to ensure all collected data is processed;</li> <li>Are quality checks performed on data entered, for example range checks,</li> </ol>	<p>Verification team based on review of provided supporting documents and remote interviews confirms the following:</p> <ul style="list-style-type: none"> <li>✓ the personnel involved in the WBT/surveys are trained and experienced.</li> <li>✓ there exists a standardized system for data entry and analysis to produce final result.</li> <li>✓ there exist a system or process in place to minimize the introduction of errors.</li> <li>✓ there is a system in place to ensure all collected data is processed.</li> </ul>



**CDM-PoA-VCR-FORM**

	<ul style="list-style-type: none"><li>g) inconsistency checks, checking of subsamples of data by supervisors;</li><li>h) is there a system to check for errors, record and report errors reported and document the remedial action taken;</li><li>i) What is the level of security and type of backup processes to guarantee data integrity, for example methods to prevent fraud and accidental deletion?</li></ul>	there exists a quality checks of data entered.
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**Document information**

<i>Version</i>	<i>Date</i>	<i>Description</i>
04.0	6 April 2021	Revision to: <ul style="list-style-type: none"> <li>• Reflect the “Clarification: Regulatory requirements under temporary measures for post-2020 cases” (CDM-EB109-A01-CLAR).</li> </ul>
03.0	31 May 2019	Revision to: <ul style="list-style-type: none"> <li>• Ensure consistency with version 02.0 of the “CDM validation and verification standard for programmes of activities” (CDM-EB93-A08-STAN);</li> <li>• Make structural and editorial improvements.</li> </ul>
02.0	29 December 2017	Revision to align with the requirements of the “CDM validation and verification standard for programme of activities” (version 01.0).
01.0	5 June 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: programme of activities, verifying and certifying		