



**Validation report form for inclusion of component
project activities
(Version 02.0)**

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

BASIC INFORMATION

Title and UNFCCC reference number of the programme of activities (PoA)	Efficient and Clean Cooking for Mozambican Low Income Households (GS ID: 5562)	
Version numbers of the PoA-DD to which this report applies	03	
Title and reference number of each CPAs to be included	CPA Ref. no.	Title
	6155	Efficient And Clean Cooking For Mozambican Low Income Households – George Dimitrov VPA 1 (ID: 103000000005745)
Sectoral scopes for each CPA	CPA Ref. no.	Sectoral scopes
	6155	03
Applied methodologies and standardized baselines for each CPA	CPA Ref. no.	Selected methodologies and standardized baselines
	6155	AMS-II.G, Version 10.0 - Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass
Version number of the validation report	02	
Completion date of the validation report	05/04/2019	
Coordinating/managing entity (CME)	South Pole	
Host Party(ies)	Mozambique	
Estimated amount of annual average greenhouse gas (GHG) emission reductions or GHG removals by sinks in the crediting period (tCO₂e), per CPA	CPA Ref. no.	tCO₂e
	6155	22,311.03
Name and UNFCCC reference number of the DOE	EPIC Sustainability Services Private Limited (E-0062)	
Name, position and signature of the approver of the validation report	 Dr.D.Siddaramu, Team Leader	

	 K. Sudheendra, Director and Head Operations
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SECTION A. Executive summary

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EPIC Sustainability Services Private Limited (EPIC) has been contracted by South Pole Group/MozCarbon to undertake the VPA inclusion services “Efficient And Clean Cooking For Mozambican Low Income Households – George Dimitrov VPA 1” under the PoA titled “Efficient and Clean Cooking for Mozambican Low Income Households” (GS ID: 5562). This report summarizes the findings of the validation of the project, performed on the basis of UNFCCC criteria for CDM, Gold Standard requirements as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to the Kyoto Protocol, the CDM rules and modalities as agreed in the Bonn Agreement, the Marrakech Accords and the CDM Executive Board’s decisions.

The verification team has, based on the recommendations in the Validation and Verification Standard for PoA version 1.0^{/1/}, Gold Standard requirements^{/2/} and employed a risk-based approach in the verification, focusing on the identification of significant risks and reliability of project monitoring and generations of estimated GS-VERs. The validation is not meant to provide any consulting towards the client. However, stated request for clarifications and/or corrective actions may provide input for improvement of the PDDs.

The scope of the validation is the independent and objective review and ex-post determination of the monitored reductions in GHG emission by the project activity. The verification is based on the validated PoA PDD^{/3/} Version 02, dated 01/12/2018 (hereinafter PoA-PDD), corresponding validation report^{/4/}. These documents were reviewed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures and related rules and guidance.

The objective of this project is to replace old inefficient conventional cook stoves (hereinafter referred to as baseline cook stoves) with efficient cook stoves (hereinafter referred to as project cook stoves) by making it available/affordable to low income rural households across the neighbourhood of 25 de Junho, Bagamoyo, George Dimitrov, Inhagoia, Inhagoia A, Nsalene, Magoanine A, Malhazine and Zimpeto (south) in Maputo, Mozambique.

The validation team determines the conformity of the actual project activity and its operation with the PDD and Passport. EPIC has, by means of a desk review and an on-site visit, assessed that all physical features of the proposed GS project activity proposed in the PDD/passport^{/2/} are in place, and that the project participants have operated the GS project activity as per the PDD/passport^{/2/}. Thus the verification team has concluded that the project activity was implemented and operated as per PDD/passport, and that all physical features of the project are in place.

The project activity was registered by applying the small scale methodology AMS-II.G, “Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass”^{/5/} version 10.0 and the monitoring plan is in accordance with the applied methodology. It was confirmed during the site visit that the project activity is implemented in line with the applicability criteria of the methodology, validated PoA PDD^{/3/}, Validation and Verification Standard for PoA version 1.0^{/1/} and Gold Standard requirements^{/2/}.

EPIC’s validation approach was based on the requirements as defined under the Kyoto Protocol, Marrakech accord, as well as those defined by the CDM Executive board and Gold Standard. EPIC’s approach was risk-based, drawing on an understanding of the risks associated with reported GHG emissions data and the controls in place to mitigate these. The examination includes assessment of evidence relevant to the amounts and disclosures in relation to the estimated emission reductions.

A.1. Validation team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Validation findings
1.	Team Leader	IR	D	SiddaRamu	Central office, Bangalore	√	√	√	√
2.	Team Member	IR	R	Madhukar	Central office, Bangalore	√	x	x	√
3.	Team Expert	ER	Muzima	Adelio	Central office, Bangalore	√	√	√	√

A.2. Technical reviewer and approver of the validation 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	Radhamadhavan	Vijayaraghavan	Central office, Bangalore
2.	Approver-Head Operations	IR	Krishnachar	Sudheendra	Central office, Bangalore

SECTION B. Means of validation**B.1. Desk/document review**

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As a first step, the validation team has reviewed the initial VPA PDD^{/6/} (hereinafter referred to as initial VPA PDD), initial VPA passport^{/7/} (hereinafter referred to as initial VPA Passport), validation report^{/4/} and additional background documents submitted by the project participant. As a result of these findings, the PP has submitted the final VPA PDD^{/8/} and final VPA Passport^{/9/} addressing the issues.

B.2. On-site inspection

Duration of on-site inspection: 09/07/2018 to 11/07/2018				
No.	Activity performed on-site	Site location	Date	Team member
1.	• General information about the project. • Chronology of Events/ Implementation cycle of the project activity. • Barriers faced/overcome in the processes (additionality) • Local Stakeholder consultation processes • Legal/ Statutory Clearances and Agreements Signed • Baseline determination • Application of appropriate Methodology • Operation and maintenance Procedures • Technical details of project • Data monitoring and storage practices • Calibration and maintenance requirement of the equipment • Monitoring Methodology • Review of the implementation status of the project activity. • Review of applicability conditions of the applied GS baseline and monitoring methodology and applicable methodological tools. • Check on applicable national policies and regulations and their eventual impacts in terms of changing of the baseline scenario and baseline emissions. • Validation of the values of ex-ante determined parameters. • Review of the Monitoring plan. • Validation of Stakeholder Consultation by interviewing the stakeholders. • Validation of Sustainable Development Monitoring Plan and mitigation measures. • Validation of the scores of the Sustainable Development indicators. • Validation of Sustainable Development Assessment. • Validation of Sustainable Development indicators with respect to the level of risk associated with the Safeguarding Principles of the Do-No Harm Assessment (DNHA).	Project site	09/07/2018 to 11/07/2018	Full team

B.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Chatora	Goodmore	CEO, Mozambique Carbon Initiatives Limitada	09/07/2018 to 11/07/2018	KPT and Usage Survey, Project design, Distribution system of cookstoves, Baseline fuel usage, Type of cookstoves used.	Dr.D.Siddaramu and Mr. Adelio Muzuma
2.	Cumbano	Micas Noa	Mozambique Carbon Initiatives Limitada	09/07/2018 to 11/07/2018		
3.	Xerinda	Norato	Mozambique Carbon Initiatives Limitada	09/07/2018 to 11/07/2018		
4.	Pinto Monteiro	Jorge Miguel	South pole	09/07/2018 to 11/07/2018	KPT and Usage Survey, Project design, Distribution system of cookstoves, Baseline fuel usage, Type of cookstoves used. Baseline, Sustainable Development Assessment, Monitoring plan, Sustainable monitoring plan and DNHA	
5.	Marcarini	Abel Alan	South pole	09/07/2018 to 11/07/2018		
6.	Pite	Pedro	Chief of Block, Bagamoyo	09/07/2018 to 11/07/2018	Project and households	
7.	Saide	Florincia	Icemet Ltd	09/07/2018 to 11/07/2018	Raw-Material sourcing. Manufacturing, Numbering of ICS, Quality test	
8.	S.Baniquad	Leiano	Unimetal			
9.	07 Promoters and 23 site staff of Mozacarbon 08 households in Magoanine 16 households in Bagamoyo and 13 households in George Dimitrov			09/07/2018 to 11/07/2018	Usage Survey, Distribution system of cookstoves, Baseline fuel usage, Type of cookstoves used.	

B.4. Sampling approach

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The validation team used acceptance sampling approach, a sample size of 22 was required, based on an AQL of 0.5% and UQL of 15%, the producer risk used is 5% and consumer risk used was 10%. In accordance with the para 33 (a) of "Sampling and surveys for CDM project activities and programmes of activities", version 07.0^{10/} has been chosen "*The estimated volume of annual GHG emission reductions of the project activity or the PoA being verified is equal to or less than 100,000 t CO₂ eq.*"

However, the verification team visited 37 households (and 10 households non-sampled users during the site visit) in the neighbourhood of Bagamoyo, George Dimitrov and Magoanine A (south) in Maputo, Mozambique.

It was observed that all the cook stoves visited were in working condition and no discrepant records were observed with the published MR, "Distribution and Monitoring Database"^{11/}. Thus PP's set of records has been accepted in line with para 30 of "Sampling and surveys for CDM project activities and programmes of activities", version 07.

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

Areas of validation of compliance (SECTION C)	No. of CL	No. of CAR	No. of FAR
Titles of the CPAs and corresponding generic CPAs	-	-	-
Compliance with CPA-DD form	-	CAR05	-
General description of the CPAs	CL01	-	-
Application of methodologies and standardized baselines			
• Reference to methodologies and standardized baselines	-	CAR03	-
• Project boundary, sources and GHGs	-	-	-
• Baseline scenario	-	-	-
Estimation of emission reductions			
• Equations and parameters applied to calculate GHG emission reductions or net anthropogenic GHG removals	CL03 and CL04	-	-
• Data and parameters fixed ex ante	-	-	-
• Ex ante calculation of GHG emission reductions or net anthropogenic GHG removals	-	-	-
• Summary of ex ante estimates of GHG emission reductions or net anthropogenic GHG removals	-	-	-
Monitoring plan			
• Data and parameters to be monitored	CL07		
• Description of the monitoring plan	-	-	-
Start date, crediting period type and duration	-	-	-
Environmental impacts	-	-	-
Local stakeholder consultation	-	-	-
Eligibility for inclusion	-	-	-
Others (please specify)			
Use of different Fuels	CL02	-	-
Double counting	CL05	-	-
Disposal of Waste/scrap	CL06	-	-
Technical life	-	CAR01	-
Documentary evidence	-	CAR02 and CAR06	-
Application of Tools	-	CAR04	-
Total	07	06	00

SECTION C. Validation findings

After the completion of assessment by the validation team all the relevant documentation is submitted to a qualified, Independent Technical reviewer as part of EPIC' internal quality control system. A Technical reviewer team is appointed to review the draft final validation report (Draft FVR). The comments made by the Technical reviewer team are taken into consideration and incorporated in the final FVR. The technical reviewer team assesses whether all the reporting requirements have been fulfilled and whether all the issues raised were closed satisfactorily by the validation team with justification. The technical review process can also raise issues in this regard which is resolved further by the validation team to the satisfaction of the technical reviewer. The technical reviewer team either accepts or rejects the report made by the validation team. The final report (after resolutions of all findings) is then submitted to the Head-operations for review and approval.

C.1. Proposed CPAs and corresponding generic CPAs

Specific-case CPA title and reference number	Version number of the specific-case CPA-DD	Host Party	Generic CPA title, identification/reference number	Version number of the PoA-DD into which the CPA is included
Efficient And Clean Cooking For Mozambican Low Income Households – George Dimitrov VPA 1	02	Mozambique	Efficient and Clean Cooking for Mozambican Low Income Households PoA	02

C.2. Compliance with CPA-DD form

Means of validation	The validation team determined whether the VPA is completed using the valid version of the applicable CDM-CPA-DD-FORM (Component project activity design document form). The validation team has checked whether all the sections of the Component project activity design document form follows the guidelines provided in the template itself.
Findings	CAR05 was raised in this section
Conclusion	The validation team concludes that the VPA design document provides all the information in accordance with the valid version of the CDM-CPA-DD-FORM (version 08.1) ^{12/} and the instructions therein for filling the CDM-CPA-DD-FORM. The VPA design document has been prepared in line with VVS-PoA, version 01.0.

C.3. General description of the CPAs

Means of validation	The VPAs included in this PoA are small scale energy efficient ICS which will be distributed to households/communities/SMEs. The VPA included in this PoA will be implemented in the territorial boundary of host country i.e., Mozambique and the physical location of the stoves distributed will define the actual VPA boundary. The CME/PP has identified several types of stoves and some were distributed: Envirofit models (CH2200 charcoal and Econochar charcoal), Rocket Works, Mbaula stove (a stove with a metal sheet or aluminium with clay based charcoal rest); Zavala stove (clay based charcoal stove) and ACE 1 cookstove. Inclusion of such stoves would be subject to the completion of appropriate tests to prove that stove efficiencies meet the requirements of the methodology and the eligibility criteria of the PoA as specified. The VPA under this PoA will be implemented using the approved methodology AMS-II.G, Version 10.0 – “Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass”. This category comprises appliances involving the efficiency improvements in the thermal applications of non-renewable biomass falling under type Type-III small scale project activity. Validation team conducted interviews and desk reviews and checked official sources like websites to confirm the information provided.
Findings	No CLs or CARs raised in this section
Conclusion	The validation team confirms that the description of this VPA in PoA-DD is accurate, complete and provides an understanding of generic VPAs and is found to be in line with the para 90-91 of CDM VVS of PoA, version 01.

C.4. Application of methodologies and standardized baselines**C.4.1. Reference to methodologies and standardized baselines**

Means of validation	As per paragraph 192 of PoA-VVS ^{17/} version 1.0, the validation has determined whether the steps taken to assess and state its opinion on the applicability of the applied methodologies and/or combination of methodologies, tools and/or the applied standardized baselines to the VPA as specified in the corresponding generic VPA.
Findings	CL01 was raised in this section
Conclusion	Refer Appendix 5 for more details.

C.4.2. Project boundary, sources and GHGs

Means of validation	The validation team was able to confirm that the project boundary corresponds to the National boundaries of Mozambique and that all the identified emission sources which are impacted by the proposed project activity are addressed by the approved methodology and can be seen in the table below. <table border="1"> <thead> <tr> <th></th><th>Source</th><th>GHG</th><th>Included?</th><th>Justification/Explanation</th></tr> </thead> <tbody> <tr> <td rowspan="3">Baseline</td><td rowspan="3">Combustion of non-renewable biomass for cooking</td><td>CO₂</td><td>Yes</td><td>Important source of emissions</td></tr> <tr> <td>CH₄</td><td>No</td><td>Not considered as per the methodology. Exclusion is conservative assumption.</td></tr> <tr> <td>N₂O</td><td>No</td><td>Not considered as per the methodology. Exclusion is conservative assumption.</td></tr> <tr> <td rowspan="3">Project activity</td><td rowspan="3">Combustion of non-renewable biomass for cooking</td><td>CO₂</td><td>Yes</td><td>Important source of emissions</td></tr> <tr> <td>CH₄</td><td>No</td><td>Not considered as per the methodology. Exclusion is conservative assumption.</td></tr> <tr> <td>N₂O</td><td>No</td><td>Not considered as per the methodology. Exclusion is conservative assumption.</td></tr> </tbody> </table>					Source	GHG	Included?	Justification/Explanation	Baseline	Combustion of non-renewable biomass for cooking	CO ₂	Yes	Important source of emissions	CH ₄	No	Not considered as per the methodology. Exclusion is conservative assumption.	N ₂ O	No	Not considered as per the methodology. Exclusion is conservative assumption.	Project activity	Combustion of non-renewable biomass for cooking	CO ₂	Yes	Important source of emissions	CH ₄	No	Not considered as per the methodology. Exclusion is conservative assumption.	N ₂ O	No	Not considered as per the methodology. Exclusion is conservative assumption.
	Source	GHG	Included?	Justification/Explanation																											
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		N ₂ O	No	Not considered as per the methodology. Exclusion is conservative assumption.																											
Findings	No CAR/CLs were raised in this section																														
Conclusion	The validation team confirms that the identified GHG emission source occurring within the project boundary is CO₂ and no other gases are involved during the project activity. The same has been verified during the course of validation, which is in line with the applied methodology and para 105 - 110 of CDM VVS of PoA, version 01.																														

C.4.3. Baseline scenario

Means of validation	As per Paragraph 21 of the applied methodology AMS IIG Version 10, "It is assumed that in the absence of the project activity, the baseline scenario would be the use of fossil fuels for meeting similar thermal energy needs." The validation team during site visit confirmed from the households/CME that in the baseline scenario would be the use of fossil fuels for meeting similar thermal energy needs. For calculations it is assumed that there is only one device per household. Considering that baseline surveys or other methods may estimate the total consumption per household, an adjusted formula will be used in case more than one project device is used in the household. For example, if 2 project devices are installed per household, 0.5 times the baseline woody biomass consumption per household ($B_{old,HH}$) is used as the total annual quantity of woody biomass that would have been used in the absence of the project activity in each device ($B_{old,i,j}$). Where more detailed data is available e.g. the thermal capacity of the project devices and respective utilisation hours, a weighted average thermal output ($HR_{y,i,j}$) may be used to determine the savings of baseline consumption for each device.
Findings	No CAR/CLs were raised in this section
Conclusion	The validation team confirms that the baseline is defined based on the most recent data available in conformance with the methodology. All assumptions and data used by PP are listed in VPA-DD and/or its annexures with references and sources. Relevant National/Sectoral policies and circumstances are considered and listed in the VPA-DD.

C.5. Estimation of emission reductions

C.5.1. Equations and parameters applied to calculate GHG emission reductions or net anthropogenic GHG removals

Means of validation	In the proposed project, for ex-ante calculations of VPA emission reductions, the WBT (option 3) option provided in the methodology AMS-II.G version 10.0 is applied. The following table is used for ex-ante calculations:	
	Parameter	Source/Reference
	$N_{y,i}$	Database from the PO. Distributed ICS.
	$B_{old,HH}$ tonnes/household/year	From Chamanculo KPT. The KPT shall be carried out in accordance with national standards (if available) or international standards or guidelines (e.g. the KPT procedures specified by the partnership for clean indoor air (PCIA): http://www.pciaonline.org/node/1049)
	$N_{d,HH}$ Number	Value to be taken from KPT. The KPT shall be carried out in accordance with national standards (if available) or international standards or guidelines (e.g. the KPT procedures specified by the partnership for clean indoor air (PCIA): http://www.pciaonline.org/node/1049).
	Charcoal use per standard adult/day kg	Value to be taken from KPT. The KPT shall be carried out in accordance with national standards (if available) or international standards or guidelines (e.g. the KPT procedures specified by the partnership for clean indoor air (PCIA): http://www.pciaonline.org/node/1049).
	Firewood biomass	Value applied is 6 taken from Methodology
	$B_{old,i,j}$ tonnes/year	Will be calculated as follows $B_{old,i,j} = B_{old,HH} / N_{d,HH}$
	$\eta_{old,i,j}$	Value considered is 21.28% taken from "Efficiency average from Testing Report Baseline"
	$\eta_{new,i,j}$	The following values considered are taken from "Efficiency average from ICS WBT" 1. 21.28 (Baseline stove), 2. 33.09 (Envirofit CH220 ICS), 3. 37.23 (Envirofit Econochar ICS) and 4. 36.83 (Rocketworks ChaZama ICS)
	$B_{y,savings,i,j}$ tonnes/year	Will be calculated as follows; $B_{y,savings,i,j} = B_{old,i,j} \times \left(1 - \frac{\eta_{old,i,j}}{\eta_{new,i,j}}\right)$
	$f_{NRB,y}$	Default value taken of 0.91 from CDM website
	$NCV_{biomass}$	Default value of 0.029 TJ/tonne taken from IPCC Guidelines
	$EF_{projected_fossilfuel}$	Default value of 63.7 tCO ₂ /TJ considered from methodology
	μ_y	Default value of 0.5 or 1 taken from methodology
	Baseline Emissions tCO ₂ /y	Will be calculated as follows; $ER_y = B_{y,savings} * f_{NRB,y} * NCV_{biomass} * EF_{projected_fossilfuel} * N_{y,i} * \mu_y$
	Project emissions (PE _y) tCO ₂ /y	-
	Leakage emissions (LE _y) tCO ₂ /y	0, does not need to be accounted for
	Emission reduction tCO ₂ /y	Will be calculated as follows; $ER_y = B_{y,savings} * f_{NRB,y} * NCV_{biomass} * EF_{projected_fossilfuel} * N_{y,i} * \mu_y$
Findings	No CAR/CLs were raised in this section	

Conclusion	The validation team based on document review confirms that the for ex-ante calculations of VPA emission reductions, the WBT (option 3) option provided in the methodology AMS-II.G version 10.0 is applied. The methodology as well as the above referenced sources is correctly applied.
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C.5.2. Data and parameters fixed ex ante

Means of validation	As per paragraph 140 to 144 of VVS ¹⁷ version 9.0, the validation team has determined whether the steps taken and the equations and parameters applied in the PDD to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected methodology including applicable tool(s) and, where applicable, the selected standardized baseline and the “Standard for sampling and surveys for CDM project activities and programme of activities” ^{10/} .
Findings	No CAR/CLs were raised in this section
Conclusion	Refer section C.5.1 for more details.

C.5.3. Ex ante calculation of GHG emission reductions or net anthropogenic GHG removals

Means of validation	As per paragraph 140 to 144 of VVS ¹⁷ version 9.0, the validation team has determined whether the steps taken and the equations and parameters applied in the PDD to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected methodology including applicable tool(s) and, where applicable, the selected standardized baseline and the “Standard for sampling and surveys for CDM project activities and programme of activities”.
Findings	CL03 and CL04 were raised in this section
Conclusion	Refer Section C.5.1 for more details.

C.5.4. Summary of ex ante estimates of GHG emission reductions or net anthropogenic GHG removals

Means of validation	As per paragraph 140 to 144 of VVS ¹⁷ version 9.0, the validation team has determined whether the steps taken and the equations and parameters applied in the PDD to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected methodology including applicable tool(s) and, where applicable, the selected standardized baseline and the “Standard for sampling and surveys for CDM project activities and programme of activities”.
Findings	No CAR/CLs were raised in this section
Conclusion	Refer Section C.5.1 for more details.

C.6. Monitoring plan

C.6.1. Data and parameters to be monitored

Means of validation	As per paragraph 146 to 149 of VVS ¹⁷ version 9.0, the validation team has determined whether the description of the monitoring plan included in the PDD complies with the approved monitoring methodology including applicable tools and, where applicable, the “Standard for sampling and surveys for CDM project activities and programme of activities”, confirmed whether the PPs have chosen to delay the submission of the monitoring plan for the proposed CDM project activity.
Findings	CL07 were raised in this section
Conclusion	Refer Appendix 6 for more details.

C.6.2. Description of the monitoring plan

Means of validation	As per paragraph 146 to 149 of VVS ¹⁷ version 9.0, the validation team has determined whether the description of the monitoring plan included in the PDD complies with the approved monitoring methodology including applicable tools and, where applicable, the “Standard for sampling and surveys for CDM project activities and programme of activities”; confirmed whether the PPs have chosen to delay the submission of the monitoring plan for the proposed CDM project activity.
Findings	No CAR/CLs were raised in this section
Conclusion	The monitoring plan has been documented as per the methodology AMS-II.G, in a complete and transparent manner. The VPA-DD contains all the monitoring parameters and they are clearly described. The operational and management structure of the CME in context of the VPA has been clearly described in the VPA-DD and confirmed through the interview with CME/PP. The responsibilities and institutional arrangements for data collection and archiving have been clearly provided in the VPA-DD. Furthermore, for this VPA, CME has included monitoring plan and review of the same reveals the fact that the information provided in the VPA-DD can provide sufficient information to the VPA implementers of the PoA for following the monitoring requirements of the PoA in order to ensure correct monitoring procedure. The PP will conduct number of capacity building programme to ensure that households/communities/SMEs will be educated on the benefits and functional aspects of ICS. The VPA implementer will appoint the local coordinator who will be the contact person for locality. Validation team based on the review of VPA-DD confirms that clear and transparent description of the operational and management arrangement has been established by the CME for the VPA. The same has also been confirmed during the site visit interview. All the details of individual VPAs including the documents shall be controlled by VPA implementer. Furthermore the records of individual VPAs shall also be maintained by the CME. Individual VPA implementer shall sign an agreement with the CME and agrees to comply with all terms and conditions of the VPA including those related to the monitoring and data control. The same has been confirmed from the review of template agreement between the VPA implementers and the CME where the eligibility criteria for the inclusion of the VPA in PoA are mentioned. Hence any VPA which would be included in the PoA shall follow the operation and management plan of the PoA as stated in the PoA DD and signed agreement. The CME has a well-defined project management structure for monitoring of the VPA which can be verified from the PoA-DD. The monitoring plan describes the Organization chart, Monitoring plan objective and Organization, Monitoring and archiving data, QA and QC procedures, data storage etc. All the monitoring data is stored / will be recorded and kept under safe custody of the CME for a period of crediting period + 2 years or the last issuance of CERs + 2 years whichever occurs later.

C.7. Start date, crediting period type and duration

Means of validation	The start date of the programme is July 2015 as a pilot in the suburbs of Maputo. However, the implementation of the ICS started only in January 2016. Therefore, this is a retroactive programme. The duration of the proposed project is 21 years 00 months. PP has selected the crediting period to last 07 years and can be renewed two more times, up to 21 years.
Findings	No CAR/CLs were raised in this section
Conclusion	The validation team based on the document review concludes that the start date of the proposed project is January 2016 and duration of PoA is 21 years 00 months. The selection of 07 crediting period to be renewed two more times, up to 21 years is acceptable.

C.8. Environmental impacts

Means of validation	Not applicable, as the PoA includes only a small-scale project and the host party does not require an EIA
Findings	No CAR/CLs were raised in this section

Conclusion	Not applicable, as the PoA includes only a small-scale project and the host party does not require an EIA
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C.9. Local stakeholder consultation

Means of validation	As per the paragraph 203 of PoA-VVS ^{1/1} version 1.0, the validation team has determined whether the PPs completed a local stakeholder consultation process and that due steps were taken to engage stakeholders and solicit comments for the proposed CDM project activity.
Findings	No CL/CAR raised in this section.
Conclusion	The validation team has reviewed the photos of public notices pasted at places for comments. The validation team has reviewed the emails sent inviting comments from stakeholders. Based on this, the validation team has confirmed that stakeholder consultation was conducted for this VPA. The validation team has checked how the stakeholder consultation for the VPA inclusion is conducted by interviewing the stakeholders. The validation team has verified how the consultation prior to the submission of the request for an inclusion of a VPA was conducted by the PP. During the onsite visit, the validation team interviewed beneficiaries and confirmed that local stakeholders are satisfied about the project and do not have any negative comments. They informed the team that they welcome such projects. They are of the positive opinion about the project. They do not have any grievances from the project as such and are aware of the grievance mechanism and how to contact the LPP through field officers and national coordinator in case of grievances. The validation team has observed that the project does not have any visible impact on human activities. The Stakeholder feedback round was done during May and June 2018. From the feedback received during the consultation and presented in the evaluation forms, the majority of the participants demonstrate a positive attitude towards the project and programme. The main positive issues of the project, according to participants, are the reduction in biomass consumption for cooking and its financial implications to the family, the environmental focus of the project, the anticipated potential of use of locally produced stoves, the participatory approach of the project, the possibility to improve the quality of life (health and economy) of the communities.

C.10. Eligibility for inclusion

Means of validation	The validation team checked whether the VPA comply with the eligibility criteria for the inclusion of VPAs defined for the corresponding generic VPA, in accordance with the applicable requirements in the VVS PoA and the PS PoA.
Findings	No CAR/CLs were raised in this section
Conclusion	The validation team, based on the document review, interview with CME/PP/Households and site visit confirms that the proposed VPA complies with the corresponding generic VPA-DD in the latest version of the registered PoA-DD, including the eligibility criteria for the inclusion of VPAs in the registered CDM PoA and relevant CDM rules and requirements and in line with para 180 of PoA-VVS ^{1/1} version 1.0. Refer Appendix 5 for details.

SECTION D. Internal quality control

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After the completion of assessment by the validation team all the relevant documentation is submitted to a qualified, Independent Technical reviewer as part of EPIC' internal quality control system. A Technical reviewer team is appointed to review the draft final validation report (Draft FVR). The comments made by the Technical reviewer team are taken into consideration and incorporated in the final FVR. The technical reviewer team assesses whether all the reporting requirements have been fulfilled and whether all the issues raised were closed satisfactorily by the validation team with justification. The technical review process can also raise issues in this regard which is resolved further by the validation team to the satisfaction of the technical reviewer. The technical reviewer team either accepts or rejects the report made by the validation team. The final report (after resolutions of all findings) is then submitted to the Head operations for review and approval.

SECTION E. Validation opinion

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EPIC has performed the validation of the GS inclusion of the project titled “Efficient And Clean Cooking For Mozambican Low Income Households – George Dimitrov VPA 1”. The validation was performed in accordance with the Validation and Verification Standard (CDM-VVS-PoA) (version 1.0) and Gold Standard Requirements:

- Evaluation of the impact of new relevant national and / or sectoral policies and circumstances on the previously determined baseline taking into account relevant guidance from the CDM Executive Board;
- Evaluation of the correctness of the application of the approved methodology for the determination of the baseline, and the estimation of emission reductions for the applicable crediting period of the registered CDM project activity.
- Evaluation of stakeholder Consultation by interviewing the stakeholders.
- Evaluation of Sustainable Development Monitoring Plan and mitigation measures.
- Evaluation of the scores of the Sustainable Development indicators and Sustainable Development Assessment.
- Validation of Sustainable Development indicators with respect to the level of risk associated with the Safeguarding Principles of the Do-No Harm Assessment (DNHA).

The review of the final PDD and final GS Passport and the subsequently performed follow-up interviews with representatives of the project participant have provided the validation team with sufficient evidence to determine the validity of the original baseline scenario.

The validation team has concluded that final PDD uses the valid version of the PDD template and all the necessary instructions are followed in preparing the PDD. The project activity conforms with all the applicable conditions of the valid version of the applied methodology. The baseline and monitoring methodology are applied in accordance with the applicable requirements of Project Standard. The baseline, the estimated GHG emission reductions and the monitoring plan in the final PDD comply with the applicable requirements in the Project Standard. The Sustainable Development Monitoring Plan and Sustainable Development indicators comply with the applicable requirements of Gold Standard.

In our opinion, the project activities meet all relevant UNFCCC and GS requirements and hence EPIC recommends the registration of the project under GS.

Appendix 1. Abbreviations

Abbreviations	Full Texts
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification request
CME	Coordinating and Managing Entity
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CPA-DD	Component Project Design Document
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EIA	Environmental Impact Assessment
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GWP	Global Warming Potential
KPT	Kitchen Performance Test
IPCC	Intergovernmental Panel on Climate Change
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
MoC	Modalities of Communication
PDD	Project Design Document
PoA-DD	Programme Design Document
PS	Project Standard
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Clean Development Mechanism Validation and Verification Standard

Appendix 2. Competence of team members and technical reviewers

Name	Dr.D.Siddaramu	Dr.R.Madhukar	Mr. Adelio Muzuma	Mr. R.Vijayaraghavan	Mr G. Subramanyam
Role	Lead Auditor	Auditor	Host country & technical expert	Technical Reviewer	Technical expert assisting Technical review
Competence in the Sector	NA	Sector 03	Sector 03	Sector 03	Sector 03
Responsibility	Doc review, Interview, DVR preparation, DVR resolution, FVR preparation	Doc review, DVR preparation,	Interview with PP, Doc review	Technical review	Assisting in Technical review

A brief summary of the personnel involved in the validation is indicated below

Dr. D. Siddaramu holds a M.Sc., Ph.D in Environmental Science, with over 16 years of experience. A qualified Clean Development Mechanism (CDM) Lead Auditor, successfully registered more than 30 projects with United Nations Framework Convention on Climate Change (UNFCCC) and Verified Carbon Standard registry (VCS) registry; well versed with both National and International legal regime. Has hands on

experience in Environmental Impact Assessment (EIA) studies pertaining to different Ecosystem; monitoring, collection & analyzing environmental samples and conducting socio-economic surveys; data analysis. Conducting CDM/VCS audits, preparation of validation protocols and reports. He is qualified for Sector 1 based on CDM accreditation requirements and qualified lead auditor as per GS4GG EPIC accreditation.

Dr. R. Madhukar, holds a Doctoral in Environmental Science. He has more than 9 years of experience in different industries, consultancy and research and development in Environmental Impact Assessment. He has three years' experience and has participated in the validation / verification of various CDM/VCS/GS/GHG globally. He has undergone extensive training on CDM validation and verification and has been qualified as Auditor for Sectoral Scope 1 under Technical Area "1.2-Renewables". He is also an ISO 26000 lead auditor certified by Professional Evaluation and Certification Board (PECB). He has successfully completed the e-course on Carbon Monitoring in CDM Afforestation and Reforestation projects conducted by World Bank Institute. He has undergone extensive training on forestry audit requirements for various regimes including CDM, VCS, CCBA, Plan Vivo on several occasions. He has participated as part of the technical review team in various forestry projects across various regimes and has undergone training in methodologies and processes related to forestry auditing. He has on-site audit experience in forestry projects under VCS, CCB and Plan Vivo regimes.

Mr Adelio Muzuma holds a Degree in Applied Physics. From 2016 onwards has been working as freelancer for data collection and Surveys for household and community level projects implemented in multiple locations in Mozambique. He has performed several verification, validation, satisfaction surveys, CES, KPT based on random visits to beneficiaries of the systems and reported to the implementing partners. He has working knowledge of the sector and is qualified as Technical and Host Country Expert for TA 3.1 Energy demand in accordance with the procedures of EPIC.

Mr. R. Vijayaraghavan holds BE in Mechanical Engineering, M.Tech in Energy Conservation and Management and MBA in Technology Management. He is certified as Energy Auditor by Bureau of Energy Efficiency (BEE), Government of India. He has 10 years of working experience in energy sector including validation / verification of fifty CDM and VCS/GS projects and has undergone extensive training on CDM validation and verification and has been qualified as technical reviewer for several sectoral scopes. He is also an ISO 26000 lead auditor certified by Professional Evaluation and Certification Board (PECB).

Mr. G. Subramanyam, holds a Degree in Chemical Engineering and post graduate diploma in Energy management. He is a qualified Bureau of Energy Efficiency (BEE) Certified Energy Auditor with over 20 years of proven success in undertaking Energy Conservation and CDM projects. He has served as Divisional head (Carbon Advisory) with leading consultancy company at Hyderabad and has expertise in energy management, project management, financing and implementation of energy efficiency projects, as well as policy analysis. He has worked with National Productivity Council (NPC) for 19 years in various capacities since 1988. His area of specialization includes energy and conservation studies, CDM, energy efficiency surveys and policy studies, demand side management studies, Accelerated Power Development & Reform (APDRP) Studies, Municipal water pumping/street lighting studies, Renewable energy studies, implementation of energy conservation turnkey projects etc. He is qualified as Technical Expert for TA 3.1 Energy demand in accordance with the procedures of EPIC sustainability services ltd

Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	UNFCCC	Validation and Verification Standard for PoA version 1.0	http://cdm.unfccc.int/Reference/index.html	UNFCCC
2	Gold Standard	Gold Standard requirements	https://www.goldstandard.org/project-developers/standard-documents	Gold Standard
3	PP	Validated PoA PDD ^{3/} , version 02, dated 29/11/2018	-	PP
4	Third Party (i.e., DoE)	Validation report	-	DoE
5	UNFCCC	AMS-II.G, "Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass", version 10.0	http://cdm.unfccc.int/methodologies/DB/HLX/KEIBAXBE4EHO24H5/AB824MBD8	UNFCCC
6	PP	Initial VPA PDD	-	PP
7	PP	Initial VPA passport	-	PP
8	PP	Final VPA PDD	-	PP
9	PP	Final VPA Passport	-	PP
10	UNFCCC	Sampling and surveys for CDM project activities and programmes of activities", version 07.0	http://cdm.unfccc.int/	UNFCCC
11	PP	Distribution and Monitoring Database	-	PP
12	UNFCCC	CDM-CPA-DD-FORM (version 08.1)	https://cdm.unfccc.int/Reference/PDDs_For/index.html	UNFCCC
13	PP	ER sheets	-	PP

Appendix 3. Clarification requests, corrective action requests and forward action requests

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

FAR ID	NA	Section no.	Document Review	Date: 10/08/2018
Description of FAR				
NIL				
Project participant response				Date: DD/MM/YYYY
Documentation provided by project participant				
DOE assessment				Date: DD/MM/YYYY

Table 2. CL from this Validation

CL ID	01	Section no.	Document Review	Date: 10/08/2018
Description of CL				
The total number of stoves that can be distributed under this VPA is indicated as 14,527 on page no.3 and 14,554 on page no.32. The total number of ICS distributed is indicated as 7090 and 6379 on page no.32. Please clarify; make the total number of ICS distributed/operational in the VPA1 consistent throughout the VPA-DD and ER sheets.				
Project participant response				Date: 18/10/2018
The total number of distributed stoves is 7097: 1403 Rocketworks Cha ZaMa, 646 Envirofit CH2200 and 5048 Envirofit Econchar. The number was corrected in the VPA DD. The total number of stoves that can be distributed under this VPA is 15.122. The number was corrected in the VPA DD.				
Documentation provided by project participant				
TO EPIC - Mozcarbon cookstoves project - CARs 1st round\PFA\PoA and VPA-DD\VPA-DD\180918_PDD_form13_VPA(ver08.1)				
DOE assessment				Date: 30/10/2018
The total number of ICS distributed under this VPA are now made consistent in VPA-DD and ER sheets. The ER sheets ^{/13/} were checked and found ok, hence CL01 is closed.				

CL ID	02	Section no.	Document review	Date: 10/08/2018
Description of CL				
PP is requested to clarify if use of different fuels (i.e., Kerosene, LPG, Electricity, etc.,) is foreseen, how the diversity is managed in the calculations of emission reduction				
Project participant response				Date: 18/10/2018

The use of different fuels is foreseen by the PO. The monitoring survey has a section dedicated to the determination of the cooking habits. The usage of wood cookstoves, traditional charcoal cookstoves, ICSs, LPG stoves and electrical stoves can be accounted for. Nevertheless, the usage of the ICSs shouldn't affect or be affected by the use of LPG or electrical stoves, since they are used to meet different ends. For example, the LPG stoves are used to heat up small servings of milk and the ICS or traditional stoves are used to cook. This is mainly because the LPG cannot be bought in small amounts, unlike the charcoal. Therefore, its use is reduced and relegated to specific tasks, to avoid having to buy a LPG bottle in the middle of the month, for example, when the family lacks funds to do so. In the other hand, it is always possible to buy very small amounts of charcoal, sometimes just enough to cook a couple of meals, for a very accessible price.

Documentation provided by project participant

-

DOE assessment
Date: 30/10/2018

The main cooking fuel used in the project area is charcoal, which was evident from the site visit, initial Baseline Survey and Usage Survey data. PP is not accounting the use of additional fuels (i.e., LPG or electricity) in the ER calculations (i.e., baseline nor in the project scenario). Hence CL02 is closed

CL ID	03	Section no.	Document review	Date: 10/08/2018
Description of CL				
Clarify how the ERs are estimated if traditional/old cook stoves are in operation.				
Project participant response				Date: 18/10/2018
An adjustment factor is applied to account for the non-use of the efficient cook stoves. In section I.6.1 of the CDM-PoA-DD-FORM it is explained that the factor μ_y is used in equation 2 to account for any continued use of pre-project devices during the year y. This parameter is monitored at least once every two years through surveys where it is asked if the new cookstove is being used as the main cook system and how often it is cooked in these stoves.				
Documentation provided by project participant				
The estimation of μ_y is presented in the supporting folder: 030918 Survey relevant results Rev Nx EP EL.xlsx. Please consult "Data", columns BY and BW.				
DOE assessment				Date: 30/10/2018
The clarification by PP on impact of traditional (old) and project cook stoves not in use is clear. The impact of this on ER calculations is now clear from the ER calculation sheets, checked, found ok and acceptable as PP is not accounting the use of additional fuels (i.e., LPG or electricity) in ER calculations (i.e., baseline nor in the project scenario). Hence CL03 is closed				

CL ID	04	Section no.	Document review	Date: 10/08/2018
Description of CL				
In PoA-DD, section I.6. Estimation of emission reductions (page no.20), it is mentioned that “The total ex-ante estimated emissions reduction is 2,652,314.03 tCO _{2e} calculated for the first crediting period corresponding to the first 7 years of the project”.				
In VPA-DD, section B.4.4.Summary of ex ante estimates of emission reductions, The total ex-ante estimated emissions reduction is 70,315.95 tCO _{2e} for 7 years.				
Please clarify and submit the excel sheet				
Project participant response				Date: 18/10/2018
See 180917_ER Estimation -George Dimitrov.xlsx for details on calculations				
Documentation provided by project participant				
See 180917 ER Estimation -George Dimitrov.xlsx for details on calculations				

DOE assessment	Date: 30/10/2018
The emission reductions are now made consistent in VPA-DD and ER sheets. The ER sheets ^{/12/} were checked and found ok, hence CL04 is closed.	

CL ID	05	Section no.	Site visit	Date: 10/08/2018
Description of CL				
During onsite assessment, it was observed that, serial numbers were not legible in 03 cookstoves. How it is ascertained that the traceability and double counting of the stove will not be impacted. Clarify				
Project participant response				Date: 18/10/2018
<i>Redundancy of ID elements in the distribution database assures that the stove can still be identified and ID'd. The GPS point, the name of the user, the address, and the information in the selling receipts are elements that can aid in the identification.</i>				
Documentation provided by project participant				
-				
DOE assessment				Date: 30/10/2018
The clarification PP that the "stove can still be identified and ID'd. The GPS point, the name of the user, the address, and the information in the selling receipts are elements that can aid in the identification" is acceptable. The database and sales records were checked and found ok, hence CL05 is closed				

CL ID	06	Section no.	Document review	Date: 10/08/2018
Description of CL				
Clarify on the procedure adapted for disposal of old stoves and scraps generated from the project activity.				
Project participant response				Date: 18/10/2018
<i>The ICS's that are broken or no longer are in a favourable state due their lifespan are collected by the after-distribution team, ensuring that such devices are returned to the provider in order to promote their recycling or final disposition (metals for scrapyards, or ceramics for construction). The recycling and final disposal procedures shall be addressed carefully, guaranteeing that the old stoves and scraps are properly stored, considering the safety protocols for their handling and disposition. The ICS users in Maputo should return the broken ICS to Mozcarbon, who afterwards sells them to a company called Oskar Company LDA located in Mozambique harbour in order to ship them to India for recycling. The metal scraps resulting from the ICS body production by Unimetal LDA and EMAL LDA are taken to Fundação Arnaldo Silva Mucavele to melt them to produce handles for the ICS. Regarding the ceramics produced by ICEMA LDA, the scraps are processed and sold by them as filling up material for construction purposes. In case that a change of providers arises, it is essential to highlight that the recycling and final disposition of such materials shall be encouraged for the new entities in concordance with the project activities; therefore, such action shall be undertaken in order to guarantee their success.</i>				
Documentation provided by project participant				
-				
DOE assessment				Date: 30/10/2018
The clarification by PP is acceptable, hence CL06 is closed.				

CL ID	07	Section no.	Document review	Date: 10/08/2018
Description of CL				
Please ensure and make the monitoring parameters in the CPA-DD consistent and in line with the applied methodology and PoA-DD				
Project participant response				Date: 18/10/2018
<i>Parameters have been checked and are consistent in the PoA and VPA</i>				

Documentation provided by project participant	
-	
DOE assessment	Date: 30/10/2018
The monitoring parameters in the VPA-DD are made inline with the applied methodology, the VPA-DD was checked and found ok. Hence CL07 is closed	

Table 3. CAR from this Validation

CAR ID	01	Section no.	Document review	Date: 10/08/2018
Description of CAR				
The technical details of the improved cook stove is not evident from section A.3				
Project participant response				Date: 18/10/2018
The technical details of the stove were added to the section A.3., including lifespan, build materials and other details.				
Documentation provided by project participant				
-				
DOE assessment				Date: 30/10/2018
Technical details of the ICS are provided, VPA-DD was checked and found ok. Hence CAR01 is closed				

CAR ID	02	Section no.	Document review	Date: 10/08/2018
Description of CAR				
Submit documentary evidence to prove the additionality justification and for establishment of baseline scenario				
Project participant response				Date: 18/10/2018
The additionality was developed under the CDM TOOL 21, version 12.0. It can be found in the PoA section C. Demonstration of additionality of PoA; and in the VPA, sections A.1. General description of the VPA and F. Eligibility for inclusion.				
Documentation provided by project participant				
-				
DOE assessment				Date: 30/10/2018
The requested documents to prove the additionality was submitted, checked and found ok, Hence CAR02 is closed				

CAR ID	03	Section no.	Document review	Date: 06/08/2018
Description of CAR				
The applied methodology "AMS-II.G, version 8.0 - Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass" is not valid, use the active version available.				
Project participant response				Date: 18/10/2018
Updated to the AMS-II.G, version 10.0				
Documentation provided by project participant				
-				
DOE assessment				Date: 30/10/2018
The latest VPA-DD, is now updated with the latest available version (i.e., 10) of the AMS-II.G, hence CAR03 is closed				

CAR ID	04	Section no.	Document review	Date: 06/08/2018
Description of CAR				
The CDM TOOL 21 Demonstration of additionality of small-scale project activities, used is not valid, use the active version available and accordingly demonstrate that the project activity is additional.				
Project participant response				Date: 18/10/2018
<i>Updated to the latest CDM TOOL 21 version 12.0. Additionality was developed accordingly</i>				
Documentation provided by project participant				
-				
DOE assessment				Date: 30/10/2018
The latest VPA-DD, is now updated with the latest available version (i.e., 12) of the CDM TOOL 21 Demonstration of additionality of small-scale project activities, hence CAR04 is closed				

CAR ID	05	Section no.	Document review	Date: 10/08/2018
Description of CAR				
Update the VPA-DD with latest version of CDM-CPA-DD-FORM				
Project participant response				Date: 18/10/2018
<i>Updated to the latest CDM-CPA-DD-FORM version 8.1</i>				
Documentation provided by project participant				
-				
DOE assessment				Date: 30/10/2018
The latest VPA-DD, is now uses the latest CDM-CPA-DD-FORM available version (i.e., 8.1), hence CAR05 is closed				

CAR ID	06	Section no.	Document review	Date: 10/08/2018
Description of CAR				
The PP to submit the following records/documents for verification 1) Sales Database 2) MoU between households and PP for ownership of GHGs 3) Third party lab reports to validate the efficiency of each type of ICS included in the VPAs 4) Establishment and description of baseline scenario 5) Survey reports (Baseline survey and project survey along with monitoring surveys) 6) Projects Participants contract with CME i.e., MozCarbon 7) Quality and safety reports/audit reports 8) ICS lifespan supporting document 9) Grievance mechanism records (if any) 10) Sustainable Development Indicators monitored and 11) Affirmation by PP that public funding and/or project funding does not result in a diversion of Official Development Assistance (ODA)				
Project participant response				Date: 18/10/2018
The documents are provided in the Supporting documents folder				
Documentation provided by project participant				
-				
DOE assessment				Date: 30/10/2018
The requested documents are submitted now, checked and found ok, Hence CAR06 is closed				

Table 4. FARs from this validation

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

Appendix 5: Eligibility criteria for inclusion of VPAs

No.	Eligibility criterion - Category/ Required condition	Means of validation	Findings	Conclusion
1	Boundary and location of the VPA	The VPA is located within the boundary of the country within the PoA boundary. Location and boundary is specified in the specific VPA-DD.	No findings raised	The eligibility criteria for inclusion of corresponding VPAs in the PoA is confirmed during the site visit from discussion with CME that all the VPAs will be located inside Mozambique's geographic boundaries i.e., Geographical boundaries of VPAs consistent with the geographical boundary of the PoA
2	Avoiding double counting	The VPA includes a means of uniquely identifying the stoves to be distributed and the end-users who will receive stoves. Photo or similar proof that stoves have a unique serial ID number or other means of identification. Database and/or Distribution Record showing that end user details including name and address are to be collected along with Stove ID.	No findings raised	To avoid double counting of GHG emission reductions or net anthropogenic GHG removals, CME/PP has recorded all the serial numbers and batch numbers in the project database, as well as the address and GPS location of each house with ICS in line with para 199-120 of VVS of PoA.
3	Technology requirements	The ICS uses one of the following fuel types: • Wood fuel • Charcoal The ICS has a minimum efficiency of 20% (AMS II.G, Version 10, para 1) Technical specification of ICS provided	No findings raised	Technical Specifications of the technology/measure will include the type, capacity and other key features of the design of the systems at the VPA level in line with para 199-120 of VVS of PoA.
4	Start date of VPA	The start date of the VPA shall be after the PoA validation start date (i.e., not prior to 13/12/2011, which was the date of PoA made available online on the UNFCCC website for Global Stakeholder Consultation). However, retroactive projects have different rules and the start date of the VPA does not need to be after the PoA validation start date.	No findings raised	The start date of the programme is July 2015 as a pilot in the suburbs of Maputo. The start date of the programme is July 2015 as a pilot in the suburbs of Maputo. The implementation of the stoves started in 01/01/2016. Therefore, this is a retroactive programme. The validation team checked the first invoice (i.e., the day on 1 st ICS was sold in this VPA) and found the date to be 01/01/2016.
5	Non-renewable biomass in use since Dec 1989	The first VPA in each country will demonstrate that non-renewable biomass has been in use since December 1989.	No findings raised	Forest degradation in Mozambique has been a consistent problem for decades, and non-renewable biomass has been used since before 31 Dec 1989. The

No.	Eligibility criterion - Category/ Required condition	Means of validation	Findings	Conclusion
				population is strongly dependent on woody fuels and 80% of the population uses wood and charcoal to supply the household needs in terms of thermal energy, causing deforestation at a large scale. Information sourced from survey methods, published literature, official reports or statistics.
6	Additionality of VPAs	The VPA shall satisfy the methodology additionality conditions for small-scale VPAs: savings must be under 180 GWh _{th} /year. Additionality was demonstrated as per Tool 21 Demonstration of additionality of small-scale project activities version 12.0	No findings raised	The purpose of the Programme is to reduce the greenhouse gas emission through the replacement of traditional cookstoves by improved cookstoves i.e., distribution of ICS to households in Mozambique. The nominal energy saving of each ICS will be less than 600 MWh/unit which is equivalent to 1800 MWh_{th}/unit. The proposed PoA has demonstrated additionality as per Tool 21 "Demonstration of additionality of small-scale project activities", version 12.0. Therefore, the validation teams confirms that the Baseline is the only alternative scenario not impeded by the identified barriers, the project activity regarding the VPA is deemed additional.
7	Official Development Assistance (ODA)	The VPA is either: a) not receiving any funding from Annex I parties; or b) the Annex I party funds do not result in a diversion of ODA.	No findings raised	The validation team based on the discussion with CME and document review confirms that the PO does not transfer credits to the Donor Country a) Confirmation by the DO or CME b) Affirmation by the funding party
8	End-user group	The VPA is either aimed at households, community organisations (eg. schools) or small/medium enterprises.	No findings raised	The validation team confirms that the end-user group is clearly defined as the communities of the selected neighbourhoods in Maputo, Mozambique. This was confirmed with the CME through discussion
9	Sampling	Sampling of stoves within the VPA must meet the requirements of AMS II G	No findings raised	The VPA sampling plan is designed to comply with the AMS II G v10.0 specifications.

No.	Eligibility criterion - Category/ Required condition	Means of validation	Findings	Conclusion
		v10.0 and the “Standard on Sampling and Surveys for CDM Projects and Programmes of Activities” (the Sampling Standard).		The VPA-DD either specifies a) sampling will be undertaken as part of the PoA Sampling Plan, or b) if VPA-specific sampling is to be undertaken, the VPA Sampling Plan must meet the requirements of AMS II G v10.0 and the Sampling Standard The validation team has checked and reviewed the approach and found it to be in line with the requirement. The DoE at the time of inclusion of VPA shall cross check the sampling to the proposed VPAs of the PoAs applying the sampling guidelines.
10	SSC Limit for VPAs	The annual energy savings of each VPA shall not go beyond the limits of 180 GWh _{th} /year over the entire crediting period.	No findings raised	This VPA can distribute a maximum of 14,554 ICS units. So far it has distributed 6379. It will distribute more stoves up to the threshold limit, but never surpassing it. The maximum number of ICS will be determined in each VPA-DD depending on the technology used. If a VPA exceeds the applicable limit, the claimable emission reduction shall be capped at 180 GWh_{th}/year.
11	Exempted from debundling	Each ICS reduces energy consumption by less than 180 GWh _{th} /year, according to the the Methodological Tool for Assessment of debundling for small-scale project activities v4.0 and the decision 1/CMP.2	No findings raised	In the decision 1/CMP.2, paragraph 28 line b) states that a Type II project activities or those relating to improvements in energy efficiency which reduce energy consumption, on the supply and/or demand side, shall be limited to those with a maximum output of 60 GWh per year, or an appropriate equivalent, in this case 180 GH_{th} per year. If so, the Methodological Tool for Assessment of debundling for small-scale project activities v4.0 states in the paragraph 10 that the project activity can qualify to use simplified modalities and procedures for smallscale CDM project activities. Specific energy savings for the

No.	Eligibility criterion - Category/ Required condition	Means of validation	Findings	Conclusion
				applied ICS estimated using Excel sheet or similar tool. The Methodological Tool for Assessment of debundling for small-scale project activities v4.0 states in the paragraph 10 that the project activity can qualify to use simplified modalities and procedures for smallscale CDM project activities if it fulfils the thresholds defined in the decision 1/CMP.2, paragraph 28 line b). It states that a Type II project activity or those relating to improvements in energy efficiency which reduce energy consumption, on the supply and/or demand side, shall be limited to those with a maximum output of 60 GWh per year, or an appropriate equivalent, in this case 180 GHht per year. Therefore, the project qualifies to use simplified modalities and procedures for small-scale CDM project activities.
12	Contractual agreement	In the case that the PO is not responsible for implementing the VPA, the organization responsible for VPA implementation, known as the Distributing Organisation (DO), has signed a contractual agreement with the CME to participate in the PoA.	No findings raised	As part of the inclusion of this SSC-VPA under the PoA, an agreement will be signed by the distributing organization representing its associated ICS technicians and the PO. The agreement will include specific provisions and declarations that confirm the SSC-VPA project implementers agree that their activity is being subscribed under the PoA. Contract signed by the parts.

Appendix 6:

Data and parameters fixed ex-ante

Net calorific value of the non-renewable woody biomass that is substituted (NCV_{biomass} , TJ/t)	PP has selected IPCC default value i.e., 0.029TJ/t. It is used for calculation of project emissions or actual net GHG removals by sinks, fixed at PoA level and for entire crediting period of the VPA. The validation team confirms that IPCC default value for wood fuel is 0.029 TJ/tonne can be used for net calorific value of the
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	non-renewable woody biomass that is substituted ($NCV_{biomass}$) which is in line with the applied methodology (AMS-II.G, paragraph 11)
Emission factor for the substitution of non-renewable woody biomass by similar consumers ($EF_{projected_fossilfuel} \text{ tCO}_2/\text{TJ}$)	PP has selected AMS-II.G default value i.e., 63.7 tCO_2/TJ . It is used for calculation of project emissions or actual net GHG removals by sinks, fixed at PoA level and for entire crediting period of the VPA. The validation team confirms that the value of 63.7 tCO_2/TJ is to be used as emission factor for the substitution of non-renewable woody biomass by similar consumers ($EF_{projected_fossilfuel}$) is in line with the applied methodology (AMS-II.G, paragraph 11)
Leakage adjustment factor to account for leakages (LAF, Fraction)	PP has applied AMS-II.G default value i.e., 0.95. It is used for calculation of leakage, fixed at PoA level and for entire crediting period of the VPA. The validation team confirms that the value applied is in accordance to paragraph AMS-II.G (option c of the paragraph 29). B_{old} will be multiplied by a net to gross adjustment factor to account for leakages. In this case surveys are not required.

Data and parameters monitored

Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable biomass ($f_{NRB,y}$, Fraction)	PP has applied a default Country specific fraction of non-renewable woody biomass (f_{NRB}) value available on the CDM website (http://cdm.unfccc.int/DNA/fNRB/index.html) i.e., 0.91. It is used for calculation of project emissions or actual net GHG removals by sinks.
Annual quantity of woody biomass used during the project activity in tonnes per device, determined through a survey ($B_{y,new,KPT}$, t/device/year)	PP has applied a measured value of 4.94 t/device/year based on data is collected in the field by means of a KPT. The weight of the biomass used by the ICS is compared with the weight of the biomass used by the traditional cookstove, in the same conditions in-line with applied methodology.
Number of project devices of type i operating in year y ($N_{y,i}$, Number)	The validation team checked the sales database and accepted the value is correct. The proposed frequency of monitoring and quality control found to be acceptable

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Document information

Version	Date	Description
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	4 May 2015	Initial publication.
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