




Validation report form for post-registration changes for CDM programme of activities

(version 01.0)

VALIDATION REPORT ON POST-REGISTRATION CHANGES (PRCs)

Title and reference number of the programme of activities (PoA)	"Improved Cookstoves Program for Zambia" UNFCCC Reference # PoA 8060
Process track	<input checked="" type="checkbox"/> Prior approval <input type="checkbox"/> Issuance <input type="checkbox"/> Renewal of crediting period
Version number of the validation report on PoA PRCs	05
Completion date of the validation report on PoA PRCs	19/03/2016
Version number of PoA-DD and/or CPA-DD applicable to this validation report	PoA-DD , Version 12.1 8060-0001 - CPA-DD, Version 12.1 8060-0002 – CPA-DD, Version 03.1 8060-0003 – CPA-DD, Version 03.1 8060-0004 – CPA-DD, Version 03.1
Type(s) of PoA PRCs	<input type="checkbox"/> Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline <input checked="" type="checkbox"/> Corrections <input type="checkbox"/> Changes to the start date of the crediting period <input type="checkbox"/> Inclusion of a monitoring plan to a registered PoA <input checked="" type="checkbox"/> Permanent changes from registered monitoring plan, monitoring methodology or standardized baseline <input type="checkbox"/> Types of changes specific to afforestation and reforestation activities <input type="checkbox"/> Changes to the programme design of a registered PoA <input checked="" type="checkbox"/> Changes to project design of generic component project activities or specific-case component project activities
Coordinating/managing entity (CME)	C-Quest Capital Malaysia Global Stoves Limited (CQC)
Host Party(ies)	Zambia
Sectoral scope(s)	3 : Energy demand
Selected methodology(ies)	AMS-II.G. ver. 3 - Energy efficiency measures in thermal applications of non-renewable biomass
Selected standardized baseline(s), where	-

applicable	
Name of DOE	KBS Certification Services Pvt. Ltd.
Name, position and signature of the approver of the validation report on PoA PRCs	 Kaushal Goyal Managing Director KBS Certification Services Pvt. Ltd.

SECTION A. Executive summary

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This PoA and CPAs involves the promotion and distribution/installation of fuel-efficient improved cooking stoves (ICS) in Zambia. The ICS disseminated through this programme will replace the prevailing inefficient three-stone fires or traditional pot support, with stoves that combust wood more efficiently and improve thermal transfer to pots, thus saving fuel and lowering greenhouse gas emissions.

KBS has been contracted by C-Quest Capital Malaysia Limited to perform validation of the permanent changes in registered PoA-DD and CPA-DDs of registered CDM PoA 'Improved Cookstoves Program for Zambia' and UNFCCC Reference No. 8060, according to the procedure detailed in CDM VVS, CDM PS and CDM PCP. The purpose of a validation is to have an independent third party assessment of the permanent changes in registered PoA-DD and CPA-DDs. In particular, the level of accuracy and/or completeness in the proposed revision of the PoA-DD and CPA-DDs, and the conformity with approved monitoring methodology applicable to the project activity.

The following permanent changes are proposed in the registered PDD:

- The sampling approach in the registered PoA-DD and CPA-DDs has been proposed to change from 'multi stage sampling' to 'simple random sampling' in the revised PoA-DD and CPA-DDs. The sampling procedures with reference to sampling frame, sampling method and sample size has also been revised, inline to the proposed 'sample random sampling', accordingly.
- Type of cook stove to be distributed in CPA (8060-0001) has been changed from EcoZoom Dura to TLC Rocket Stove in line with other implemented CPAs under the PoA. Due to the difference in thermal efficiency of cook stove (EcoZoom Dura has thermal efficiency of 38% and TLC Rocket Stove has thermal efficiency of 25.66%), the number of ICS to be distributed has been increased. Accordingly, number of ICS to be distributed under CPA (8060-0001) has been increased within the Small scale threshold ($180 \text{ GWh}_{\text{th}} / \text{annum}$).
- There are few other minor changes proposed, as stated below, to make the PoA-DD and CPA-DDs consistent with the onsite implementation, and to further clarify the information given in the DDs (PoA-CPA);
 - Registration card
 - Serial number of ICS
 - Technical Description of installed ICSs
 - Removal of mention of specific supplier of parts of ICSs
 - Abbreviation of the monitored parameters (i.e $n_{y,j}$, $\eta_{\text{new}, i}$)
 - Start date of crediting period under section A.9.1. of revised CPA-DDs

Furthermore, we confirm that:

- (a) the proposed revision points have been described, and an assessment has been provided to substantiate the reasons for each of the proposed revision points of the registered PDD, using objective evidence;
- (b) the proposed revision of the PoA-DD and CPA-DDs ensures that the level of accuracy and completeness in the monitoring and verification process is not reduced as a result of the revisions;
- (c) the proposed revision of the monitoring plan is in accordance with the approved monitoring methodology (AMS-II.G. Version03) applicable to the project activity whilst ensuring the conservativeness of the emission reductions calculation;
- (d) verification has commenced and prior approval of CDM EB is requested on proposed permanent changes in accordance with CDM VVS and CDM PS;
- (e) the information included in the latest PDD template(VVS track) is materially the same as the information in the registered PDD. The changes that are the subject of the request for approval are in track change.

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

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk review	On-site inspection	Interview(s)	Validation findings
1.	Team Leader , Technical Expert	IR	Joshi	Akhilesh	Central office	✓	✓	✓	✓

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

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer and Expert to Technical Reviewer	IR	Pal	Kaushik	Central office
2.	Manager (Technical & Certification)	IR	Pal	Kaushik	Central office

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

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

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

KBS reviewed the PoA-DD and CPA-DDs, using a risk based approach and conducted follow-up interviews. The information in revised PoA-DD and CPA-DDs is reviewed against CDM VVS, CDM PS, Kyoto Protocol requirements, UNFCCC rules, applied methodology and associated interpretations.

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

C.2. On-site inspection

The changes proposed by the PP are only related to minor changes proposed, as stated below, to make the PoA-DD and CPA-DDs consistent with the onsite implementation and the sampling approach used for conducting the ex post monitoring survey. Moreover, the change proposed by the PP does not include any project design change. Thus, the validation team confirms that the avoidance of site visit does not affect the validation opinion on the changes proposed by PP.

C.3. Interviews

No.	Telephonic Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Garg	Vineet Kumar	CQC	27/10/2015	Implementation and Operation of the CDM PoA and CPAs, Information flows for generating, aggregating and reporting the distribution database of ICS.	Akhilesh Joshi
2.	Goswami	Tridip Kumar	CQC	27/10/2015	Proposed changes in sampling approach applied for the project activity.	Akhilesh Joshi

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

Areas of validation findings	No. of CL	No. of CAR	No. of FAR
Compliance with PoA-DD and/or CPA-DD form(s)	0	0	0
Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline	0	0	0
Corrections	3	2	0
Changes to the start date of the crediting period	0	0	0
Inclusion of a monitoring plan in a registered PoA	0	0	0
Permanent changes from registered monitoring plan, monitoring methodology or standardized baseline	1	1	0
Types of changes specific to afforestation and reforestation project activities	0	0	0
Changes to the programme design of a registered PoA	0	0	0
Changes to project design of generic component project activities or specific-case component project activities	0	0	0
Others (please specify)	0	0	0
Total	4	3	0

SECTION D. Validation findings

D.1. Compliance with PoA-DD and/or CPA-DD form(s)

Means of validation	CME has revised the PoA-DD and CPA-DD (8060-0001) in latest available template version of PoA-DD and CPA-DDs on CDM EB website. Some editing and restructuring of information has been done by CME, due to change of PoA-DD template and CPA-DD template from old version to new version. Validation team checked and confirmed that revised PoA-DD and CPA-DD(8060-0001) are in latest available template version at CDM EB website.
Findings	No finding has been raised.
Conclusion	Validation team confirms that the revised PoA-DD and CPA-DDs are in compliance with the relevant forms and instructions therein. Validation Team confirms that , the material included in the new form(s) under the

VVS track is materially the same as the information in the registered PoA-DD/generic CPA-DD/specific CPA-DD.
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D.2. Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline

No temporary deviation envisaged during the PRC validation. Therefore, this section is not applicable.

D.3. Corrections

Means of validation	<p>Following corrections have been made in the registered PoA-DD and CPA-DDs -</p> <ol style="list-style-type: none"> 1) CME has made corrections in the PoA-DD and CPA-DDs, in order to bring clarity in the ICS registration process, by replacing "Registration Card" with "Registration process" throughout the revised PoA-DD and CPA-DDs. Registration of fuel efficient ICS can either be done in a hard copy or an electronic copy and information has been inserted under Section A.2 of revised PoA-DD^{/03/} and Section A.3 of revised CPA-DDs^{/04/}. The validation team reviewed the screen shots of electronic registration records^{/06/} and also the process of electronic registration for cook stove using ODK (Open Data Kit, an app based system for electronic devices e.g., mobiles) and found them appropriate for the registration purpose. 2) CME has removed reference to EcoZoom Dura stove as mentioned in section A.6 of PoA-DD, since different type of stove (TLC Rocket Stove) were implemented under first CPA. The validation team reviewed the screen shots of electronic registration records^{/06/} and confirmed the same. The CME has distributed single pot fixed ICS (TLC Rocket Stove) in place of single pot portable ICS (EcoZoom Dura), as the fixed stove increases the ownership among the end users due to their direct involvement during making of stoves at their home. 3) CME has made corrections in Part 1, Section C, on the procedure to avoid double counting and record keeping system for each CPA under the PoA. The validation team reviewed the screen shots of electronic registration records^{/06/} and confirmed the same. 4) CME has removed Grate from the part of installed ICS, as the ICS installed in actual implementation is not having this part. In place of Grate, the installed ICS have Stick support or Stick shelf as part. Same is being included in the technical description of the ICS. Validation team checked the technical specifications of the installed ICS and confirmed the same. 5) CME has removed the specific mention of TLC Green Limited as manufacturer and supplier of various parts of ICS to the COMACO, which was envisaged at the time of inclusion of CPAs. Since, there are other options available for supply of parts of ICS within and in nearby countries with similar specifications, CME doesn't want to specifically mention single supplier name for the supply of parts of ICS for the CPAs. CME confirmation on there will be no deviation in the quality and specification of the parts procured from other suppliers and efficiency of the ICS will remain the same, is acceptable. 6) CME has clarified that to maintain same size and shape of ICS, brick moulds is being provided to the end users to prepare uniform size bricks for making ICS at every location. This is acceptable, since the uniformity of structure will ensure that design and efficiency of ICS will remain same for all end users. <p>The assessment confirms that corrected information is actual reflection of actual project information and does not affect any provision of the applied methodology in any manner, as a result, is in accordance with the applied methodology.</p> <p>However, DOE has raised 2 CLs and 2 CARs as follows -</p> <ol style="list-style-type: none"> a) Clarification (CL-01) to CME about addition of additional column "Example of evidence to demonstrate compliance with eligibility criteria" under eligibility criteria table in section B.5 of the generic CPA-DD (part of PoA-DD). CME as a response, has removed the additional column from the revised generic CPA-DD (part of PoA-DD) to avoid ambiguity. b) Clarification (CL-02) to CME about the re-definition of footnote "j" of parameter Ny,i,j (i.e. definition change from "days since installation or
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	<p>distribution of the ICS .." to "days since registration of the ICS .."). CME as a response has corrected the same as per the registered PoA-DD and CPA-DDs. The definition is now in line with the applied methodology.</p> <p>c) Clarification (CL-02) to CME about the reason for changing the start date of crediting period under section A.9.1 of the revised CPA-DDs from 20/07/2015 to 15/05/2015 (for CPA 8060-0002) and from 20/07/2015 to 15/06/2015 (for CPA 8060-0003, CPA 8060-0004). CME as a response, have clarified that CME had earlier on 31/08/2015 requested change in crediting period start date of mentioned three CPAs (8060-0002, 8060-0003 and 8060-0004) in accordance with Para 279(a) of Project standard version 09. The request was accepted by the CDM EB on 07/09/2015; however the change in start date under section A.9.1 of respective CPA-DDs has been done during this PRC to reflect the revised crediting period start date as shown on project webpage. Validation team confirms that the changes requested are in accordance with Para 279 of Project Standard and therefore, does not require any formal PRC or DOE opinion.</p> <p>d) Corrective action request (CAR-01) to CME about other changes noted in the revised CPA-DD, for example: (i) the descriptions of CPA in page 3 - 6 of CPA-DD; and (ii) a few changes in the demonstration of eligibility in section D.5 of the CPA-DD, among which a change of the start date of the CPA is also observed (i.e. change from 15/05/2015 to 01/11/2012), etc. CME as a response have clarified the changes and corrected the typo error in mentioning the crediting period start date in revised CPA-DDs in line with registered CPA-DDs.</p> <p>e) Corrective action request (CAR-01) to CME about inconsistency in abbreviation of the monitored parameters (i.e. $n_{y,j}$, $\eta_{new, i}$) throughout the revised PoA-DD as well as revised CPA-DDs. CME as a response, have corrected the abbreviation of the monitored parameters (i.e. $n_{y,j}$, $\eta_{new, i}$) in revised PoA-DD and CPA-DDs in line with registered PoA-DD, CPA-DDs and applicable methodology.</p> <p>DoE confirms that, there is no change in the eligibility criteria of CPAs for inclusion in the PoA, as can be seen from the revised PoA-DD and generic CPA-DD . The eligibility criteria table under section B.5 of generic CPA-DD was wrongly shown in track change mode, which is now corrected in revised PoA-DD.</p>
Findings	CL-01, CL-02, CL-03, CAR-01 and CAR-02 has been raised in this context. Refer Appendix 4 of this report for detailed finding.
Conclusion	<p>The validation team confirms</p> <ul style="list-style-type: none"> ✓ The corrected information is an accurate reflection of actual project information; ✓ The corrected parameters are in accordance with the applied methodology and registered monitoring plan. <p>Considering the proposed changes have been identified prior to the verification through a standalone contract, these are submitted as part of request for prior approval to CDM EB.</p>

D.4. Changes to the start date of the crediting period

No changes in start date of crediting period envisaged during this PRC validation. Therefore, this section is not applicable.

D.5. Inclusion of a monitoring plan in a registered PoA

Monitoring plan is already included in registered PoA during validation. Therefore, this section is not applicable.

D.6. Permanent changes from registered monitoring plan, monitoring methodology or standardized baseline

Means of validation	Revised the sampling method applied in the monitoring plan from multi stage sampling to simple random sampling method.
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	<p>CME has applied the simple random sampling approach for conducting the ex post monitoring survey according to the Guideline for “Sampling and surveys for CDM project activities and programmes of activities”, Version 03.0 (EB 75, Annex 08)^{17/}. The population of the project activity is homogeneous based on the fact that, all the consumers are from same community and region. Multistage sampling is difficult to implement and not a cost effective method for the project developer.</p> <p>Therefore, simple random sampling is chosen to replace the existing sampling method. Accordingly, sampling frame, sampling method and sample size calculation of monitoring plan is revised with information correlated with simple random sampling. The explanation provided by the CME is deemed sufficient and validation team confirms that revised sampling approach complies with the methodology and sampling guidelines and is suitable for the project activity population.</p> <p>However, DOE has raised 1 CL and 1 CAR as follows -</p> <ol style="list-style-type: none"> Corrective action request (CAR-03) to CME about using latest applicable version of the guidelines as well as standard for “Sampling and surveys for CDM project activities and programmes of activities”. CME as a response have revised the PoA-DD and CPA-DDs in line with latest applicable version of the standard and guideline. Clarification (CL-04) to CME about reason for using 2 different equations for estimation of sample size for monitored parameter $\eta_{new, i}$ under section B.7.2 of the generic CPA-DD(part of PoA-DD) as well as revised CPA-DDs. CME as a response has clarified that second equation of Student's t-distribution will only be used in case the result of sample size using first equation is less than 30. This is in line with the Para 13 of Standard for “Sampling and surveys for CDM project activities and programme of activities” Version 05.0.
Findings	CAR-03 and CL-04 has been raised in this context. Refer Appendix 4 of this report for detailed finding.
Conclusion	<p>The validation team confirms that the revised monitoring plan does not reduce the level of accuracy of the monitoring compared with the requirements contained in the registered POA-DD.</p> <p>The same version of the methodology has been considered by the CME. However, a more recent version for Standard for “Sampling and surveys for CDM project activities and programmes of activities” (version 04.1)^{16/} has been consistently used. The proposed changes do not lead to any deviation from the applied methodology/tools.</p> <p>The validation team confirms that -</p> <ul style="list-style-type: none"> ✓ The permanent changes are unlikely to lead to a reduction in the accuracy of the calculation of emission reductions. ✓ The permanent changes proposed in the revised POA-DD, CPA DDs and corresponding ER sheets do not affect the application of the applied methodology in any manner.

D.7. Types of changes specific to afforestation and reforestation activities

No changes specific to afforestation and reforestation activities envisaged during the PRC validation. Therefore, this section is not applicable.

D.8. Changes to the programme design of a registered PoA

No changes in programme design of registered PoA envisaged during the PRC validation. Therefore, this section is not applicable.

D.9. Changes to project design of generic component project activities or specific-case component project activities

Means of validation	CME has changed the type of ICS to be distributed in CPA 8060-0001 area from EcoZoom Dura to TLC Rocket Stove in the revised CPA-DDs based on the actual implementation of the project activity. Since the efficiency of the TLC Rocket Stove
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	<p>is less than the EcoZoom Dura Stove, the number of ICS to be distributed for the project activity has been increased within the Small scale threshold of 180 GWh_{th}/annum. The estimated value of CERs remains the same, since there is no change proposed in $f_{NRB,y}$ value for the PoA and baseline Cook stove study.</p> <p>Since the annual energy saving per cook stove is 0.007% and which is less than 5% of SSC threshold, the project is considered additional according to the compliance with eligibility criteria set forth in section D.5 and the definitions outlined in EB 68 Annex 27 paragraph 2 (c).</p>
Findings	No finding has been raised.
Conclusion	<p>The validation team confirms that:</p> <ul style="list-style-type: none"> ✓ The changes in the revised PoA-DD and CPA-DD (8060-0001) are a complete and accurate reflection of the actual project information. ✓ The actual changes comply with the relevant requirements in the Project standard related to changes to the project design of included CDM CPA (8060-0001) ✓ Revised CPA (8060-0001) is still additional, as annual energy saving per cook stove is less than 5% of SSC threshold (180 GWh_{th} / annum) ✓ Revised number of ICS to be distributed in CPA (8060-0001) is within the small scale threshold. ✓ Revised CPA (8060-0001) meets the eligibility criteria of applied methodology AMS-II.G. Version 10. ✓ The level of accuracy of monitoring is not affected by the proposed changes in the Revised CPA (8060-0001).

SECTION E. Internal quality control

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Following the completion of the assessment process and a recommendation by the validation team, the validation opinion prepared by Team Leader is independently reviewed by internal Technical Reviewer (TR). TR reviews if all the KBS procedures have been followed and all conclusions are justified in accordance with applicable standards, procedures, guidance and CDM decisions. The TR either is qualified for the technical area within the CDM sectoral scope applicable to project activity or is supported by qualified independent technical expert at this stage.

The Technical Reviewer will either accept or reject the recommendation made by the validation team. The findings can be raised at this stage and project participant must address them within agreed timeline.

The opinion recommended by Technical Reviewer will be signed by Manager Technical & Certification and finally authorized by the Managing Director on behalf of KBS as final validation opinion.

SECTION F. Validation opinion

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KBS Certification Services Pvt. Ltd. has performed the validation of the post registration changes of the project activity Improved Cookstoves Program for Zambia by C-Quest Capital Malaysia Global Stoves Limited (CQC).

The report is based on the assessment of the revised PDD undertaken through application of standard auditing techniques including but not limited to desk review, follow up actions (e.g., electronic (telephone or e-mail) interviews) and also the review of the applicable approved methodological and relevant tools, guidance's and CDM decisions.

The validation was performed on the basis of rules and requirements defined by UNFCCC for the CDM project activities. The review of the revised POA-DD, supporting documentation and subsequent follow-up actions (including onsite visit and interviews), have provided KBS with sufficient evidence to determine the fulfilment of stated criteria.

The summary of proposed and assess changes in as under;

- a) The sampling approach in the registered PoA-DD and CPA-DDs has been proposed to change from 'multi stage sampling' to 'simple random sampling' in the revised PoA-DD and CPA-DDs. The sampling procedures with reference to sampling frame, sampling method and sample size has also been revised, inline to the proposed 'sample random sampling', accordingly.
- b) Type of cook stove to be distributed in CPA (8060-0001) has been changed from EcoZoom Dura to TLC Rocket Stove in line with other implemented CPAs under the PoA. Due to the difference in thermal efficiency of cook stove (EcoZoom Dura has thermal efficiency of 38% and TLC Rocket Stove has thermal efficiency of 25.66%), the maximum number of ICS to be distributed has been increased. Accordingly, number of ICS to be distributed under CPA (8060-0001) has been increased 13,572 ICS from 11,241 ICS, which is within the Small scale threshold ($180 \text{ GWH}_{\text{th}} / \text{annum}$).
- c) There are few other minor changes proposed, as stated below, to make the PoA-DD and CPA-DDs consistent with the onsite implementation, and to further clarify the information given in the DDs (PoA-CPA);
 - Registration card
 - Serial number of ICS
 - Technical Description of installed ICSs
 - Removal of mention of specific supplier of parts of ICSs
 - Abbreviation of the monitored parameters (i.e. $n_{y,j}$, $\eta_{\text{new}, i}$)
 - Start date of crediting period under section A.9.1. of revised CPA-DDs

Considering the validation of changes has occurred prior to commencement of verification therefore these would require prior approval from CDM EB. The validation confirms that the implementation of the post registration changes is in line with the applied methodology and all other applicable tools and guidance.

The description in the revised PoA-DD, Version 12.1 dated 18/03/2016 and revised CPA DDs meets all relevant UNFCCC requirements for the CDM PoA and CPA DDs and correctly applies the selected baseline and monitoring methodology.

This report is the combined assessment opinion for all the changes that are proposed in the POA-DD and request is submitted for prior approval by CDM EB.

Appendix 1. Abbreviations

Abbreviations	Full texts
AMS	Approved Methodology Small Scale
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CERs	Certified Emission Reductions
CL	Clarification Request
CME	Coordinating/Managing Entity
CO ₂ e	Carbon dioxide equivalent
COP	Conference of Parties
CPA	Component Project Activity
CQC	C-Quest Capital Malaysia Global Stoves Limited
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
ERs	Emission Reductions
FAR	Forward Action Request
GHGs	Greenhouse Gas(es)
ICS	Improved cooking stoves
ISO	International Organization of Standardization
IPCC	Intergovernmental Panel on Climate Change
KBS	KBS Certification Services Pvt. Ltd.
KP	Kyoto Protocol
PoA-DD	Programme of Activities- Design Document
PoA	Programme of Activities
PS	CDM Project Standard
PCP	CDM Project Cycle Procedure
QA/QC	Quality Assurance/Quality Control
UNFCCC	United Nations Framework Convention on Climate Change
VVS	CDM Validation & Verification Standard

Appendix 2. Competence of team members and technical reviewers

Personnel Name:		Akhilesh Joshi	
Qualified to work as:			
Team Leader	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>
Validator/Verifier	<input checked="" type="checkbox"/>	Financial Expert	<input type="checkbox"/>
Technical Reviewer	<input type="checkbox"/>	Local Expert (India)	<input checked="" type="checkbox"/>
Area(s) of Technical Expertise			
Sectoral Scope	Technical Area		
Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources		
Energy Demand	TA 3.1: Energy Demand		
Manufacturing Industries	TA 4.1 Cement sector		
Approved by (Manager C & T)	Gagandeep Kakkar		
Approval date:	31/12/2014		

Personnel Name:	Kaushik Pal		
Qualified to work as:			
Team Leader	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>
Validator/Verifier	<input checked="" type="checkbox"/>	Financial Expert	<input type="checkbox"/>
Technical Reviewer	<input checked="" type="checkbox"/>	Local Expert (India)	<input checked="" type="checkbox"/>
Area(s) of Technical Expertise			
Sectoral Scope	Technical Area		
Energy Industries (renewable/non-renewable)	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
	TA 1.2 Energy generation from renewable energy sources		
Energy Demand	TA 3.1 Energy Demand		
Approved by (Manager C & T)	Gagandeep Kakkar		
Approval date:	31/12/2014		

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
01	CME	Registered PoA-DD Version 10	Web link	CDM EB
02	CME	Registered CPA-DDs – 8060-0001 - CPA-DD, Version 10 8060-0002 – CPA-DD, Version 01.1 8060-0003 – CPA-DD, Version 01 8060-0004 – CPA-DD, Version 01	Web link Web link Web link Web link	CDM EB
03	CME	Revised PoA-DD Version 12.1	Dated 18/03/2016	CME
04	CME	Revised CPA-DDs – 8060-0001 - CPA-DD, Version 12.1 8060-0002 – CPA-DD, Version 03.1 8060-0003 – CPA-DD, Version 03.1 8060-0004 – CPA-DD, Version 03.1	Dated 18/03/2016 Dated 18/03/2016 Dated 18/03/2016 Dated 18/03/2016	CME
05	DOE (KBS)	PRC Validation contract between CME (CQC) and DOE (KBS)	Dated 01/10/2015	CME
06	PP (COMACO)	Screen Shots – Electronic Database and Cookstove Registration Steps (using ODK)	-	CME
07	CDM Meth Panel	AMS-II.G. “Energy efficiency measures in thermal applications of non-renewable biomass” (Version 3.0)	Web link	CDM EB
08	UNFCCC	Kyoto Protocol (1997)	Web link	CDM EB
09	CDM EB	Clean development mechanism validation and verification standard (Version: 09.0),	Web link	CDM EB
10	CDM EB	Clean development mechanism project standard (Version: 09.0)	Web link	CDM EB
11	CDM EB	Clean development mechanism project cycle procedure (Version: 09.0)	Web link	CDM EB
12	CDM EB	Project Webpage of POA 8060 “Improved Cookstoves Program for Zambia”	Web link	CDM EB
13	-	Websites Referred	http://cdm.unfccc.int/index.html	others
14	DOE (KBS)	Verification Protocol	Dated 27/10/2015	DOE(KBS)
15	CDM EB	Instructions for filling out the programme	Part of PoA-DD template	CDM EB

		design document form for small-scale CDM programme of activities		
16	CDM EB	Standard for "Sampling and surveys for CDM project activities and programmes of activities" (version 04.1)	Web link	CDM EB
17	CDM EB	Guidelines for sampling and surveys for CDM project activities and programme of activities (version 03.0)	Web link	CDM EB
18	TUV SUD	Validation Report of PoA version 05	Web link	CDM EB
19	TUV SUD	Validation Report of - CPA 8060-0001 – Version 05 CPA 8060-0002 – Version 01 CPA 8060-0003 – Version 01 CPA 8060-0004 – Version 01	Web link Web link Web link Web link	CDM EB
20	Aprovecho Research Center	Testing of Efficiency of TLC Rocket Cook Stove	Report	CQC
21	CME	Revised ER Spreadsheets – 8060-0001 – ER sheet, Version 06 8060-0002 – ER sheet, Version 06 8060-0003 – ER sheet, Version 06 8060-0004 – ER sheet, Version 06	Dated 11/09/2015	CME
22	CME	Technical Specification with description of various parts of installed ICS	-	CME
23	CDM EB	Email from CDM registration team about confirmation of change in start date of crediting period for CPA 8060-0002, CPA 8060-0003 and CPA 8060-0004	Dated 07/09/2015	CME
24	CME	Email from CME to CDM registration team about request for change in start date of crediting period for CPA 8060-0001	Dated 11/03/2016	CME

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

Table 1. CL from this validation

CL ID	01	Section no.	D.3.	Date: 05/02/2016
Description of CL				
PP to clarify the reason for including an additional column "Example of evidence to demonstrate compliance with eligibility criteria" under eligibility criteria table in section B.5 of the revised generic CPA-DD (part of PoA DD, page 23 -26)				
CME's response				Date: 10/02/2016
"Example of evidence to demonstrate compliance with eligibility criteria" under eligibility criteria table in section B.5 of the revised generic CPA-DD (part of PoA DD, page 23 -26) was included just for transparency purpose. As this is not a mandatory requirement in accordance to the guidelines of SSC- POA DD version 4 hence CME has removed the additional column to avoid further ambiguity.				
Documentation provided by CME				
Revised PoA-DD version 12 dated 10/02/2016				
DOE assessment				Date: 11/02/2016
CME as a response, have clarified that the additional column was added in order to demonstrate the evidences that will be available for each CPA in order to show compliance with eligibility criteria of PoA. Since, this is not a requirement of generic CPA-DD, the CME has removed the column from section B.5. of generic CPA-DD. Only the changes related to reference of sections of PoA-DD has been done in eligibility criteria and section was wrongly shown in track change mode during revision. The revised generic CPA-DD is correctly showing the section B.5. with minor changes in referencing of PoA-DD, which is acceptable. Therefore, this CL is closed.				

CL ID	02	Section no.	D.3.	Date: 01/03/2016
Description of CL				
For the re-definition of footnote "j" of parameter Ny,i,j (i.e. definition change from "days since installation or distribution of the ICS .." to "days since registration of the ICS .."). In accordance with the methodology (AMS II.G version 3, paragraph 16), CME to clarify, whether the registration of a ICS in CME's system would stand for the ICS already put into operation on or prior to the registration date?				
CME's response				Date: 07/03/2016
The registration process will be done on or after installation date. However in accordance with the applied methodology AMS II.G version 3, the change has been removed and the original definition of "j" has applied in the revised CPA-DD.				
Documentation provided by CME				
Revised CPA-DD for CPA 8060-0001 version 12, Revised CPA-DD for 8060-0002 version 03, Revised CPA-DD for 8060-0003 version 03 , and Revised CPA-DD for 8060-0003 version 03				
DOE assessment				Date: 18/03/2016
CME as a response have corrected the definition of footnote "j" of parameter Ny,i,j in accordance with the applied methodology AMS II.G version 3 as "days since installation or distribution of the ICS..." which is same as registered CPA-DDs. However, the same change is not reflected in revised PoA-DD. CL is open.				
CME's response				Date: 18/03/2016
Similar changes have been made in revised PoA DD also				
Documentation provided by CME				
Revised PoA-DD version 12.1				
DOE assessment				Date: 19/03/2016
CME as a response have corrected the definition of footnote "j" of parameter Ny,i,j in accordance with the applied methodology AMS II.G version 3 as "days since installation or distribution of the ICS..." in accordance with registered PoA-DD. Therefore this CL is closed.				

CL ID	03	Section no.	D.3.	Date: 18/03/2016
Description of CL				
CME to clarify the reason for changing the start date of crediting period under section A.9.1 of the revised CPA-DD (CPA 8060-0002, CPA 8060-0003 and CPA 8060-0004) from 20/07/2015 to 15/05/2015 (for CPA 8060-0002) and from 20/07/2015 to 15/06/2015 (for CPA 8060-0003, CPA 8060-0004).				
CME's response				Date:
At the time of CPA inclusion the start date of crediting period of mentioned three CPAs were 20/07/2015. Later via mail dated 31/08/2015 the CME has requested UNFCCC to change the start date as follows for the mentioned CPAs:				
No.	CDM Ref. No. of CPAs	Initial start date of crediting period	Revised start date proposed	Remarks
1	8060-0002	20/07/2015	15/05/2015	15/05/2015 is the CPA inclusion date
2	8060-0003	20/07/2015	15/06/2015	15/06/2015 is the CPA inclusion date
3	8060-0004	20/07/2015	15/06/2015	15/06/2015 is the CPA inclusion date
UNFCCC on its mail dated 07/09/2015 has confirmed the changes in crediting periods for the above CPAs and can also be seen from the respective web links. The same is provided to DOE as evidence.				
Now, CME has also requested UNFCCC to change the start date of crediting period of CPA 8060-0001 from 01/02/2013 to 07/06/2014 (which is the date of installation of first stove under this CPA). The change on start date for this CPA is less than two year and is permissible without prior approval under clause 149 of PCP Version 09, EB 82, Annex 15; since Zambia, the host country of the PoA is an LDC. The mail dated 11/03/2016 is submitted to DOE for verification.				
Documentation provided by CME				
Mail correspondence dated 07/09/2015 and dated 11/03/2016 from UNFCCC				
DOE assessment				Date:

CME as a response, have clarified that start date of crediting period of mentioned three CPAs (8060-0002, 8060-0003 and 8060-0004) were 20/07/2015 at the time of CPA inclusion to the PoA 8060. However, CME has requested change in crediting period start date in accordance with Para 279(a) of Project standard version 09. The request was accepted by the CDM EB on 07/09/2015; however the change in CPA-DDs has been done during this PRC to reflect the revised crediting period start date as shown on project webpage.

Also, CME has requested change in crediting period start date of CPA 8060-0001 in accordance with Para 279(b) of Project standard version 09 on 11/03/2016. The Project cycle procedure Para 149 allows CME to notify the secretariat, by e-mail through a dedicated e-mail address directly.

Therefore the changes done in CPA-DDs are acceptable and this CL is closed,

CL ID	04	Section no.	D.6.	Date: 18/03/2016
Description of CL				
CME to clarify the reason for using 2 different equations for estimation of sample size for monitored parameter $\eta_{new,i}$ under section B.7.2 of the generic CPA-DD(part of PoA-DD) as well as revised CPA-DDs.				
CME's response				Date: 18/03/2016
<p>Para 13 of Standard for "Sampling and surveys for CDM project activities and programme of activities; Version 05.0" says "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 <u>numeric mean value</u> (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>For η_{new} (WBT Test), as the parameter is the numeric mean value, if the sample size calculated from simple random sampling formula is less than 30, PP shall apply the Student's t-distribution to determine the sample size. However if sample size is still less than 30, in accordance with the applied methodology minimum sample size would need to scale up to 30</p>				
Documentation provided by CME				
Revised PoA-DD version 12.1 Revised CPA-DDs for 8060-0001 version 12.1, Revised CPA-DDs for 8060-0002 version 03.1, Revised CPA-DDs for 8060-0003 version 03.1, and Revised CPA-DDs for 8060-0004 version 03.1				
DOE assessment				Date: 19/03/2016
<p>CME as a response, have clarified that in accordance with Para 13 of the Standard for "Sampling and surveys for CDM project activities and programmes of activities" (version 05), second equation is only applied in case the resulting sample size of monitoring parameter $\eta_{new,i}$ after applying the first equation(as mentioned below) is less than 30.</p> $n \geq \frac{1.96^2 NV}{(N-1) \times 0.1^2 + 1.96^2 \times V}$ <p>This is in line with the requirement of Para 13 of Standard for "Sampling and surveys for CDM project activities and programmes of activities" (version 05), since the parameter $\eta_{new,i}$ is numeric mean value.</p> <p>Therefore this CL is closed.</p>				

Table 2. CAR from this validation

CAR ID	01	Section no.	D.3.	Date: 01/03/2016
Description of CL				
<p>In CPA 8060-0002, besides changes at PoA level (e.g. revised registration process and the revised sampling plan above), other changes are also noted in the revised CPA-DD, for example: (i) the descriptions of CPA in page 3 - 6 of CPA-DD; and (ii) a few changes in the demonstration of eligibility in section D.5 of the CPA-DD, among which a change of the start date of the CPA is also observed (i.e. change from 15/05/2015 to 01/11/2012), etc.</p> <p>CME to substantiate the same with proper evidence.</p>				
CME's response				Date: 07/03/2016

The changes mentioned in the CPA-DD are to avoid any further possible issue to be raised during verification process as:

Section A.3:

Deletion of grate: Grate was mentioned as a part of the distributed ICS, but in actual process the grate is not part of stoves those are envisaged for distribution. As mentioned in A.5, a stick support or stick shelf will still be there to optimize the combustion and heat transfer.

Deletion of TLC Green Limited: During registration of the PoA, it was envisaged that various parts of stove would be manufactured under the supervision of TLC Green Limited in Zambia. However considering the availability of stoves parts from different manufacturer, CME has removed the specific mention of TLC Green Limited as different stove parts will be available from other manufacturer also. However the technical specification mentioned will be maintained across the PoA/CPA and the same will be open for verification to DOE.

Section A.5:

Deletion of readily available building bricks: Earlier it was envisaged that the bricks needed for stove installation will be readily available from the locally available clay. However considering the size/dimensions of the brick needed, brick moulds are being used to prepare those bricks from locally available clay. This is done to make the installation process uniform across the household and doesn't have any impact on efficiency of the stoves.

Few changes are there to make it in line with the revised PoA DD format. Eg as mentioned in page 7 of the CPA DD, the earlier "section A.4.2" is shown as "Part II of Section A".

There are some changes in the text in CPA-DD including change of the start date of the CPA from 15/05/2015 to 01/11/2012 in **section A.9.1 & D.5**, those are typographical errors and have been corrected in the revised CPA-DD.

Documentation provided by CME

Revised CPA-DD for 8060-0002 version 03,
Revised CPA-DD for 8060-0003 version 03 , and
Revised CPA-DD for 8060-0003 version 03

DOE assessment

Date: 08/03/2016

PP as a response have clarified that , there are 3 other corrections in the revised CPA-DDs of CPA 8060-0002 , 8060-0003 and 8060-0004 –

- i) Deletion of grate – CME has removed Grate from the part of installed ICS, as the ICS installed in actual implementation is not having this part. In place of Grate, the installed ICS have Stick support or Stick shelf as part. Same is being included in the technical description of the ICS. Validation team checked the technical description of the installed ICS and confirmed the same.
- ii) Deletion of TLC Green Limited – CME has removed the specific mention of TLC Green Limited as manufacturer and supplier of various parts of ICS to the COMACO, which was envisaged at the time of inclusion of CPAs. Since, there are other options available for supply of parts of ICS within and in nearby countries with similar specifications, CME doesn't want to specifically mention single supplier name for the supply of parts of ICS for the CPAs. CME confirmation on there will be no deviation in the quality and specification of the parts procured from other suppliers and efficiency of the ICS will remain the same, is acceptable.
- iii) Deletion of readily available building bricks – CME has clarified that to maintain same size and shape of ICS, brick moulds is being provided to the end users to prepare uniform size bricks for making ICS at every location. This is acceptable, since the uniformity of structure will ensure that design and efficiency of ICS will remain same for all end users.

Also, PP has corrected the typo error in the start date of crediting period from 01/11/2012 to 15/05/2015 (for CPA 8060-0002) and 15/06/2015 (for CPA 8060-0003, 8060-0004) in the revised CPA-DDs. This is same as registered CPA-DDs and hence acceptable.

The above changes are in line with the actual implementation and can be further verified during 1st MP verification of the individual CPAs; Therefore, this CAR is closed.

CAR ID	02	Section no.	D.3.	Date: 18/03/2016
Description of CL				
Abbreviation of the monitored parameters (i.e $n_{y,j}$, $\eta_{new,i}$) is not consistent throughout the revised PoA-DD as well as revised CPA-DDs.				
CME's response				Date: 18/03/2016

All the abbreviations of the monitored parameters (i.e $n_{y,j}$, $\eta_{new,i}$) are now made consistent throughout the revised PoA-DD as well as revised CPA-DDs in accordance to the registered PoA-DD	
Documentation provided by CME	
Revised PoA-DD version 12.1 Revised CPA-DDs for 8060-0001 version 12.1, Revised CPA-DDs for 8060-0002 version 03.1, Revised CPA-DDs for 8060-0003 version 03.1, and Revised CPA-DDs for 8060-0004 version 03.1	
DOE assessment	Date: 19/03/2016
CME as a response, have corrected the abbreviation of monitored parameters (i.e $n_{y,j}$, $\eta_{new,i}$) in PoA-DD as well as all CPA-DDs in accordance with registered PoA-DD and methodology applied. Therefore, this CAR is closed.	

CAR ID	03	Section no.	D.6.	Date: 18/03/2016
Description of CL				
Latest applicable version of the guidelines as well as standard for "Sampling and surveys for CDM project activities and programmes of activities" has not been referred in revised PoA-DD as well as revised CPA-DDs.				
CME's response				Date: 18/03/2016
Latest applicable version of the guidelines as well as standard for "Sampling and surveys for CDM project activities and programmes of activities" have now referred in revised PoA-DD as well as revised CPA-DDs.				
Documentation provided by CME				
Revised PoA-DD version 12.1 Revised CPA-DDs for 8060-0001 version 12.1, Revised CPA-DDs for 8060-0002 version 03.1, Revised CPA-DDs for 8060-0003 version 03.1, and Revised CPA-DDs for 8060-0004 version 03.1,				
DOE assessment				Date: 19/03/2016
CME as a response have now applied the latest applicable version of guidelines as well as standard for "Sampling and surveys for CDM project activities and programmes of activities" throughout the revised PoA-DD and CPA-DDs. Therefore, this CAR is closed.				

Table 3. FAR from this validation

N/A

Document information

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