
 <p style="text-align: center;"><b>Validation report form for post-registration changes for component project activities</b> (Version 01.0)</p>	
Complete this form in accordance with the instructions attached at the end of this form.	
<b>BASIC INFORMATION</b>	
<b>Title and UNFCCC reference number of the component project activity (CPA)</b>	ONIL Stoves —Guatemala – Uspantán (8480-0001)
<b>Version number of the validation report on CPA PRCs</b>	2.0
<b>Completion date of the validation report on CPA PRCs</b>	17/07/2018
<b>Version number of PoA-DD and CPA-DD applicable to this validation report</b>	Version 7 & Version 7
<b>Title and UNFCCC ref. no. of the registered PoA into which the CPA is included</b>	Distribution of ONIL Stoves—Guatemala (8480)
<b>Type(s) of CPA PRCs</b>	<input type="checkbox"/> Temporary deviations from the registered monitoring plan, applied methodologies or applied standardized baselines <input type="checkbox"/> Corrections <input type="checkbox"/> Changes to the start date of the crediting period <input type="checkbox"/> Inclusion of monitoring plan <input checked="" type="checkbox"/> Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other applied standards or tools <input type="checkbox"/> Changes to the project design <input type="checkbox"/> Changes specific to afforestation and reforestation activities
<b>Coordinating/managing entity</b>	HELPS International Incorporated
<b>Host Parties</b>	Guatemala
<b>Applied methodologies and standardized baselines</b>	AMS-II.G: "Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass" (Version 03)
<b>Mandatory sectoral scopes linked to the applied methodologies</b>	3: Energy demand
<b>Conditional sectoral scopes linked to the applied methodologies, if applicable</b>	--
<b>Name and UNFCCC reference number of the DOE</b>	E-0005: TÜV SÜD South Asia Private Limited
<b>Name, position and signature of the approver of the validation report on CPA PRCs</b>	

	<p>Milind Shende Manager- Certification Body TUV SUD South Asia</p>
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**SECTION A. Executive summary**

TÜV SÜD South Asia Pvt. Ltd. has performed the validation of post registration changes to the included CPA “ONIL Stoves —Guatemala – Uspantán” under the registered Programme of Activity” Distribution of ONIL Stoves—Guatemala”. The validation is based on the currently valid documentation of the United Nations Framework Convention on Climate Change (UNFCCC).

The Validation process includes three phases:

- Desk review of documents;
- Follow-up interviews with the relevant personnel;
- Resolution of outstanding issues and the issuance of final validation opinion.

The ONIL Stoves – Guatemala Uspantán small-scale CPA (SSC-CPA) involves the distribution and installation of ONIL Stoves for use by households in Guatemala. This CPA is the first for the Guatemalan “Distribution of ONIL Stoves – Guatemala” PoA and includes 11,148 improved cook stoves benefiting families throughout the country. Before the adoption of the ONIL Stove, households in Guatemala used inefficient, conventional open fire. HELPS International manufactures the ONIL stoves and distributes them to communities throughout Guatemala. The ONIL Stove is a fuel-efficient stove that reduces the amount of firewood required by households by up to 58%, compared to the baseline, and results in lower emissions based on its construction. A single ONIL Stove will save 3.837 tons of CO<sub>2</sub>e per year. Validation of the post registration changes was done for the CPA with respect to the changes in the monitoring plan.

The Validation of Post Registration Changes has been carried out in accordance with the CDM VVS PoA v1.0.

No Clarification Request (CLs) or Corrective Action Requests (CARs) were raised during the course of validation process of PRC for the CPA.

**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/document review	On-site inspection	Interview(s)	Validation findings
1.	Team Leader, Validator & Technical expert	IR	Murty	Eswar	TUV SUD South Asia Pvt Ltd	✓	✓	✓	✓

**B.2. Technical reviewer and approver of the validation report on CPA 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 Expert (TR)	EI	Meesa	Srikanth	TUV SUD South Asia Pvt Ltd
2.	Technical reviewer	IR	Shende	Milind	TUV SUD South Asia Pvt Ltd
3	Approver	IR	Shende	Milind	TUV SUD South Asia Pvt Ltd

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

The information presented in the CPA-DD on the technical design has been assessed for accuracy and completeness using standard auditing techniques including:

- (a) Document review including
  - A review of data and information;
  - Cross checks between information provided in the PoA-DD and information from sources other than those used, the DOE's sectoral or local expertise. If necessary, independent background investigations were performed.
- (b) Follow-up actions including:
  - Interviews with relevant stakeholders in the host country, personnel with knowledge of the project design and implementation;
  - Cross checks between information provided by interviewed personnel (i.e. by checking sources or other interviews) to ensure that no relevant information has been omitted.
- (c) Reference to available information relating to projects or technologies similar to the proposed project activity under validation;

In opinion of TÜV SÜD the project description, as included in the PDD, is accurate and complete; and it provides a correct understanding of the proposed project activity.

A complete list of all documents reviewed is attached as Appendix 3 to this report.

**C.2. On-site inspection**

On-site inspection has not been conducted since this is validation of post registration changes, which are done in line with the approved PRC of the CDM PoA.

**C.3. Interviews**

Interviews were conducted with the personnel of CME and C-Quest Capital in connection with the post registration changes namely sampling plan and methods for the CPA.

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Goswami	Tridip Kumar	C-Quest Capital	11/04/2018	Post registration changes	Eswar Murty
2.	Verma	Pooja	C-Quest Capital	11/04/2018 10/07/2018-17/07/2018	Sampling plan & methods	Eswar Murty
3	Miller	Stephen	Helps International	11/04/2018	Sampling plan & methods	Eswar Murty

**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 CPA-DD form			
Temporary deviations from the registered monitoring plan, applied methodologies or applied standardized baselines			
Corrections			
Changes to the start date of the crediting period			
Inclusion of monitoring plan			
Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other applied standards or tools			
Changes to the project design			
Changes specific to afforestation and reforestation project activities			
Others (please specify)			
<b>Total</b>	0	0	0

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

<b>Means of validation</b>	The CME has used the Version 8.1 of the CPA-DD form for the post registration changes, since the template is the latest version. The CPA-DD has been registered under the form version 1.0. of the CPA-DD form.
<b>Findings</b>	No CL/CAR has been raised.
<b>Conclusion</b>	TUV SUD confirms that the CPA-DD form is in compliance with the latest guidelines as per VVS PoA v1.0

**D.2. Temporary deviations from the registered monitoring plan, applied methodologies or applied standardized baselines**

<b>Means of validation</b>	NA
<b>Findings</b>	NA

<b>Conclusion</b>	NA
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**D.3. Corrections**

<b>Means of validation</b>	NA
<b>Findings</b>	NA
<b>Conclusion</b>	NA

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

<b>Means of validation</b>	NA
<b>Findings</b>	NA
<b>Conclusion</b>	NA

**D.5. Inclusion of monitoring plan**

<b>Means of validation</b>	NA
<b>Findings</b>	NA
<b>Conclusion</b>	NA

**D.6. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other applied standards or tools**

<b>Means of validation</b>	<p>The revised CPA-DD was validated with respect to the post registration changes done to the registered PoA-DD which was approved by CDM EB on 2 July 2018. The sampling plan has been checked in line with the requirements of the “Standard for sampling and surveys for CDM project activities and programme of activities” Version 07.0.</p> <p>The sampling method adopted in the registered CPA-DD was analysed. Multi-stage sampling was adopted in the registered CPA-DD and given that the population being studied is relatively homogeneous with respect to the parameter being studied, therefore simple random sampling is chosen by the CME to replace the existing sampling method during the post registration changes. Accordingly, sampling frame, sampling method and sample size calculation of monitoring plan has been checked with respect to the revised documentation for sampling.</p> <p>The sampling method adopted during the post registration changes is the ‘Simple Random Sampling’ in which unbiased random selection of individual households is carried out to ensure that from the many samples which are drawn, the average sample would accurately represent the population. Each ONIL stove in the target population is uniquely identifiable by its unique ID number. Each ONIL stove can thus be allocated a Sample Selection Number in each monitoring period, starting at 1 and increasing up to the total number of ONIL Stoves in the Database for that pre-defined sampling frame. Applying the random number generators, the ONIL stove can then be randomly chosen from the defined population up to the required sample size as calculated by the CME.</p> <p>The parameters involved in this approach are</p> <p><math>n_{y,j}</math>:- Visual inspection of the premises to see if ONIL stove is operational and in use. Interview with end user if required to verify that ONIL stove is still in use (Yes/No)</p> <p><math>SS_y</math>:- Interview with end user and visual inspection to determine if a baseline (replaced) stove is still being used in addition to ONIL stove (Yes/No)</p> <p><math>\eta_{new,i}</math>:- Thermal efficiency of ONIL Stoves will be tested using Water Boiling Test (WBT)</p> <p>For estimation of the sample size for parameters <math>n_{y,j}</math> and <math>SS_y</math> the following equation<sup>1</sup> is used:</p>
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<sup>1</sup> Equation 1 of Appendix 2, *Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities (Version 04.0)*

	$n \geq \frac{1.96^2 N \times p(1-p)}{(N-1) \times 0.1^2 \times p^2 + 1.96^2 \times p(1-p)}$ <p>Where:</p> <p><math>n</math> = Sample size</p> <p><math>N</math> = Population size (Total number of households/ICS)</p> <p><math>p</math> = Expected proportion</p> <p>1.96 = Represents the 95% confidence required (In the case of 90% confidence, 1.645 shall be used)</p> <p>0.1 = Represents the 10% relative precision</p> <p>The following assumptions are made by the CME to exemplify the sample size calculation for parameters: <math>n_{y,j}</math>, <math>SS_y</math>, and <math>\eta_{new,y,i}</math>.</p> <ol style="list-style-type: none"> <li>1. The population size, <math>N</math>, is taken as 100,000 households. (Assuming one ONIL Stove for one household).</li> <li>2. It is expected at least 80% of ICS still in operation, hence the expected proportion <math>p</math> for <math>n_{y,l}</math> is taken as 0.8.</li> <li>3. According to Baseline study, it is expected that 17.2% of baseline stoves will continue to be in use. As per Standard for sampling and surveys for CDM project activities and programme of activities, a proportion can describe either of the two possible scenarios of the success rate or the failure rate and project proponents may use the larger of the two proportions in the sample size calculation, which is <math>p</math> or <math>(1-p)</math>. The sample size calculation is therefore based on anticipating a discontinued use of 80%. Thus the expected proportion <math>p</math> for <math>SS_y</math> is taken as 0.828 which is the value of the larger proportion.</li> <li>4. The expected mean of ICS thermal efficiency is 0.24 and its standard deviation is 0.048.</li> </ol> <p>The assumptions, sampling frame and size has been checked and confirmed by the DOE during post registration changes.</p>
<b>Findings</b>	No CL/CAR has been raised.
<b>Conclusion</b>	TUV SUD confirms that the PP is able to implement the monitoring plan and conduct the sampling as per the guidelines.

**D.7. Changes to the project design**

<b>Means of validation</b>	NA
<b>Findings</b>	NA
<b>Conclusion</b>	NA

**D.8. Changes specific to afforestation and reforestation project activities**

<b>Means of validation</b>	NA
<b>Findings</b>	NA
<b>Conclusion</b>	NA

**SECTION E. Internal quality control**

Internal quality control within the team is assured by means of a technical review process that takes place after the on-site assessment and after closure of findings. The internal quality control in the verification process is given by the final decision made by the Certification Body.



**SECTION F. Validation opinion**

TÜV SÜD has performed a validation of the post registration changes for the registered CPA-“ONIL Stoves —Guatemala – Uspantán (8480-0001)”. Standard auditing techniques have been used for the validation process. The validation has been performed following the requirements of the latest version of the CDM VVS for PoA version 1.0 and the approved PRC of the CDM PoA.

The review of the project design documentation, subsequent follow-up interviews, and further validation of references have provided TÜV SÜD with sufficient evidence to validate the post registration changes.

The single purpose of this report is its use during the registration process as part of the CDM project cycle. Based on the work described in this report, nothing has come to our attention that causes us to believe that any project component or issue has not been covered by the validation process.

## Appendix 1. Abbreviations

Abbreviations	Full texts
<b>CAR</b>	Corrective Action Request
<b>CDM</b>	Clean Development Mechanism
<b>CDM-EB</b>	CDM Executive Board
<b>CER</b>	Certified Emission Reduction
<b>CM</b>	Combined Margin
<b>CMP</b>	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
<b>CO<sub>2</sub>e</b>	Carbon dioxide equivalent
<b>CR / CL</b>	Clarification Request
<b>DNA</b>	Designated National Authority
<b>DOE</b>	Designated Operational Entity
<b>EF</b>	Emission Factor
<b>EIA / EA</b>	Environmental Impact Assessment / Environmental Assessment
<b>ER</b>	Emission Reduction
<b>FAR</b>	Forward Action Request
<b>GHG</b>	Greenhouse Gas(es)
<b>GWP</b>	Global Warming Potential
<b>IRL</b>	Information Reference List
<b>KP</b>	Kyoto Protocol
<b>MP</b>	Monitoring Plan
<b>MR</b>	Monitoring Report
<b>OM</b>	Operational Margin
<b>PCP</b>	Project Cycle Procedure
<b>PoA-DD</b>	Programme of Activities Design Document
<b>PP</b>	Project Participant
<b>PS</b>	Project Standard
<b>PRC</b>	Post Registration Changes
<b>PoA</b>	Programme of Activities
<b>TÜV SÜD</b>	TÜV SÜD South Asia Pvt. Ltd
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>VVS</b>	CDM Validation And Verification Standard for Programme of Activities

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



South Asia

## CERTIFICATE OF APPOINTMENT

Mr. Murty, Eswar fulfills the requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd to participate in audits.

Qualification applicable to					
Standard	CDM	GS	VCS	ISO-14064-1: 2006	Other
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Qualification as						
Status	Validator	Verifier	ATL	Technical Reviewer	Financial Expert	Technical Expert
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TA (s)	1.1, 1.2, 3.1, 4.1, 13.1					

Country Expertise						
Region	1	2	3	4	5	Other
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Further countries						

Technical Area
1.1_Thermal Energy Generation
1.2_Renewables
3.1_Energy demand
4.1_Cement and lime production
13.1_Solid waste and wastewater

This appointment is valid until 31.05.2019 and is bound by internal requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd.

In case of loss of validity of this certificate as per result of an assessment according to internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference no. CB-IND-CCP-0031/009.

Date	Signature
01/06/2018	

IS-CMS-CB-POG-01/05, version 03

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South Asia

## CERTIFICATE OF APPOINTMENT

Mr. Meesa, Srikanth fulfills the requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd to participate in audits.

Qualification applicable to					
Standard	CDM	GS	VCS	ISO-14064-1: 2006	Other
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Qualification as						
Status	Validator	Verifier	ATL	Technical Reviewer	Financial Expert	Technical Expert
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TA (s)	1.2, 3.1, 7.1, 13.1					

Country Expertise						
Region	1	2	3	4	5	Other
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Further countries						

Technical Area
1.2_Renewables
3.1_Energy demand
7.1_Transport
13.1_Solid waste and wastewater

This appointment is valid until 31.05.2019 and is bound by internal requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd.

In case of loss of validity of this certificate as per result of an assessment according to internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference no. CB-IND-CCP-0096/005.

Date	Signature
01/03/2018	

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### Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	UNFCCC	<a href="https://cdm.unfccc.int/ProgrammeOfActivities/po_a_db/NQIZR3S1J58FLTHUKMB2X6PY07CE49/view">https://cdm.unfccc.int/ProgrammeOfActivities/po_a_db/NQIZR3S1J58FLTHUKMB2X6PY07CE49/view</a>	PoA web page	
2	UNFCCC	<a href="https://cdm.unfccc.int/ProgrammeOfActivities/cp_a_db/Q158GU3XA9MFE0H2Z6OI4JTNDL7WRP/view">https://cdm.unfccc.int/ProgrammeOfActivities/cp_a_db/Q158GU3XA9MFE0H2Z6OI4JTNDL7WRP/view</a>	CPA web page	
3	UNFCCC	<a href="https://cdm.unfccc.int/PRCContainer/DB/prcp672576736/view">https://cdm.unfccc.int/PRCContainer/DB/prcp672576736/view</a>	Approved PRC page	
4	UNFCCC	Registered PoA-DD	Version 6 12/12/2012	
5	CME	Revised PoA-DD	Version 7 23/01/2018	
6	CME	Registered CPA-DD for CPA 8480-0001 : ONIL Stoves —Guatemala – Uspantán	Version 6 12/12/2012	
7	CME	Revised CPA-DD for CPA 8480-0001 : ONIL Stoves —Guatemala – Uspantán	Version 7 12/07/2018	
8	CME	Revised Sampling plan		

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

**Table 1. CLs from this validation**

No CL's have been raised.

**Table 2. CARs from this validation**

No CARs have been raised.

**Table 3. FARs from this validation**

No FAR has been raised.