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Gold Standard Verification Report

GOLD STANDARD VERIFICATION OF GS PROJECT NO. (GS-949) CLEAN AND EFFICIENT COOKING AND HEATING PROJECT, CHINA

Report No. 10161JZ

30 April 2016

TÜV SÜD South Asia Pvt. Ltd.
Environmental Technology
Carbon Management Service
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South Asia

Date of first issue of this report	Revision No. of this report
18-08-2015	05
Project Participant (contractor): Impact Carbon 47 Kearny Street, Suite 600, San Francisco, CA 94108	**Project Site(s):** Shanxi Province, Guizhou Province, Enshi Autonomous State of Hubei Province **Host Country:** China
Applied Methodology / Version: Indicative Programme, Baseline, and Methodology for Improved Cook-Stoves and Kitchen Regimes, Version 02	**Scope(s):** 03 **Technical Area(s):** 3.1
Monitoring Period: 01-03-2013 to 28-02-2015	
First MR Version : **06-03-2015** Version No.: 01	**Final MR Version:** **28-04-2016** Version No.: 07

VERIFICATION STATEMENT

TÜV SÜD has performed a verification of the aforementioned GS project activity. Standard auditing techniques have been used for the verification of the project. The review of the monitoring report, PDD and the sustainability parameters followed by subsequent follow-up interviews, and further verification of references have provided TÜV SÜD with sufficient evidence to determine the fulfilment of stated criteria in the checklist. In the opinion of TÜV SÜD, the project meets all relevant Gold Standard requirements for the VER if the underlying assumptions do not change. TÜV SÜD recommends the project for issuance by the GS Technical Advisory Committee.

The project is generating emission reductions as a GS project. The verifier can confirm that the GHG emission reductions are calculated without material misstatements. Our opinion refers to the project's GHG emissions and resulting GHG emission reductions reported, both determined due to the valid and registered project's baseline, its monitoring plan and associated documents. The verification has been performed following the GS V2 requirements, latest GS requirements and Validation and Verification Standard V7.0 (VVS) of UNFCCC.

Based on the information we have seen and evaluated we confirm that the implementation of the project resulted in 975,704 t CO_2e of emission reductions during the verification period 01-03-2013 to 28-02-2015.

Vintage 2013	378, 583 tCO_2e
Vintage 2014	508, 427 tCO_2e
Vintage 2015	88, 694 tCO_2e
Total	975,704 tCO_2e

South Asia

Pune, 30/04/2016

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Certification Body “Environment and Energy”
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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
VER	Verified Emission Reduction
CR	Clarification Request
DNH	Do No Harm
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission Reduction
FAR	Forward Action Request
GHG	Green House Gas(es)
GS	Gold Standard
LSC	Local Stakeholder Consultation
MDG	Millennium Development Goals
MP	Monitoring Plan
PDD	Project Design Document
SFR	Stakeholder Feedback Round
SD	Sustainable Development
TÜV SÜD	TÜV SÜD South Asia Pvt Ltd
TAC	Technical Advisory Committee
UNFCCC	United Nations Framework Convention on Climate Change

South Asia

Table of Contents Page

South Asia

1 METHODOLOGY

1.1 Objective

TÜV SÜD has been commissioned by the aforementioned client to perform an independent verification assessment.

The objective of the verification work is to comply with the requirements of Gold Standard requirements. According to this assessment TÜV SÜD shall:

- ensure that the project activity has been implemented and operated as per the registered PDD, and that all physical features (technology, project equipment, monitoring and metering equipment) of the project are in place,
- ensure that the published MR and other supporting documents provided are complete, verifiable and in accordance with applicable GS and CDM requirements,
- ensure that the actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology,
- evaluate the data recorded and stored as per the applicable requirements.
- assess the sustainability monitoring parameters as per the GS requirements.

1.2 Scope

The scope of any assessment is defined by the underlying legislation, regulation and guidance given by relevant entities or authorities. In the case of GS project activities, the scope is set by:

- Gold Standard V2.2 requirements
- Gold Standard Toolkit v2.2
- Gold Standard V2 requirements
- Clean Development Mechanism Validation And Verification Standard (VVS) published under http://cdm.unfccc.int
- Baselines and monitoring methodologies (including GHG inventories)
- Environmental issues relevant to the applicable sectoral scope
- Applicable environmental and social impacts and aspects of GS project activity
- Current technical and operational knowledge of the specific sectoral scope and information on best practice
- Stakeholder consultation and feedback

The verification process is not meant to provide any form of consulting for the project participant (PP). However, stated requests for clarifications, corrective actions, and/or forward actions may provide input for improvement of the project design.

Once TÜV SÜD receives the PDD/Passport/MR, it is made available on the GS Registry through a dedicated interface on the Gold standard website. The Verification shall commence only after the project documents are listed on the registry.

1.3 Verification Process

The information provided by the project participants is assessed by applying the means of verification specified in the GS V2.2, Toolkit and the VVS.

Once TÜV SÜD receives the Monitoring Report and a confirmation from any PP to upload, the MR is made available on the GS Registry.

A competent assessment team is selected prior to the start of the verification. The team is selected to cover the technical area(s), sectoral scope(s) and relevant host country experience for

evaluating the CDM project activity. Additionally a competent Technical Reviewer or Technical Reviewer Team is appointed to conduct checks on quality and completeness.

The verification team performs first a desk review, followed by an on-site visit, which results in the formation of a draft report and a list of findings. The next step involves the evaluation of the findings through direct communication with the PPs and then finally the preparation of the verification report. This verification report and other supporting documents then undergo an internal quality control by the CB "Environment and energy" before submission to the GS.

1.4 Appointment of the Team

According to the technical scopes and experiences in the sectoral or national business environment, TÜV SÜD has composed a assessment team in accordance with the appointment rules of the TÜV SÜD Certification Body "Environment and Energy".

The composition of an assessment team has to be approved by the Certification Body (CB) to assure that the required skills are covered by the team. The CB of TÜV SÜD operates the following qualification levels for team members that are assigned by formal appointment rules:

- Assessment Team Leader (ATL);
- Verifier (V);
- Verifier Trainee (T);
- Technical Experts (TE);
- Country expert (CE);
- Technical reviewer (TR).

It is required that the sectoral scope(s) and the technical area(s) (TA) linked to the methodology/ies and projects have to be covered by the assessment team. Appointment certificates of the selected team members are attached to this report as Annex.

Assessment Team:

Name	Qualification	Scope	Technical Area	Host country experience	Onsite visit
Jiang Zhe (Eric)	ATL			☑	☑
Dou Wenxuan	E	☑	☑ 3.1	---	---

Technical Reviewer (s):

Name	Qualification	Scope	Technical area
Eswar Murty	**TR**	☑	☑ **3.1**

1.5 Review of Documents

Publication has been initiated before the verification activities started. Based on the published MR the assessment team performed a desk review to:

- verify the completeness of the data and the information presented in the MR,
- check the compliance of the MR with respect to the monitoring plan depicted in the registered PDD and verify that the applied methodology was carried out. Particular attention to the frequency of data collect surveys, the quality of the surveys conducted to extract the information, Total metering equipment including calibration requirements, and the quality assurance and quality control procedures was paid,
- evaluate the data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

A complete list of all documents reviewed is available in the Information Reference List (IRL) attached as Annex 2 to this report.

1.6 On-site Assessment and follow-up Interviews

As of the requirements of “Gold Standard Methodology for Improved Cook-stoves and Kitchen Regimes – version 02”, the DOE did a random sampling approach to identify the owners of ICS to be visited on-site.

There are three clusters spread from north to south in China. Considering the different improved stoves are intensively used in different seasons, the audit team decided to visit three clusters each according to the seasons in the consecutive monitoring periods. The following visits have been performed for Enshi state, Hubei Province by randomly selection of the community and the households (the number of households is defined by the DOE in this case since there is no requirement from the registered PDD and GS Methdology):

The community has been selected randomly. The result of this approach is recorded with questionnaire answered by households visited (IRL 03).

The selected villages under the cluster Enshi State, Hubei Province:

- Hubei Province, Enshi State, Bajiao Ganxi Village (10 households);
- Hubei Province, Enshi State, Bajiao Zhushaxi Village (13 households);
- Hubei Province, Enshi State, Taiyanghe Malin Village (11 households);
- Hubei Province, Enshi State, Taiyanghe Baiguoshu Village (8 households)

The list of the questions asked during the site visit is followed,

1, Name of the cookstove owner, ID Number, address, GPS;

2, Type of cookstove use before, its status, and baseline type if applicable;

3, Type of fuel used before and after for daily use

4, If they have more than one improved cookstove, write down in details regarding reasons and frequency of use

5, Installation date of cookstove (Does the stove has chimney)?

6, How about the stove quality, is there any aftersale service?

7, Did you know who and how to report when the stove was broken?

8, What do you think the advantages when using the cookstove, i.e air quality, annual fuel expenses, ease of use, family health, etc.9, Did you get interviewed from contacting person, what and when did you report to the survey?

10, Do you have any recommendation for the project activity?

During on-site visit i.e. 16-03-2015 to 19-03-2015 and 09/04/2015, TÜV SÜD performed a physical site inspection and interviewed project stakeholders to:

- confirm the implementation and operation of the project,
- review the data flow for generating, aggregating and reporting the monitoring parameters,
- confirm the correct implementation of procedures for operations and data collection,
- cross-check the information provided in the MR documentation with other sources,

- check the monitoring equipment against the requirements of the PDD, Passport and the approved methodology, including calibrations, maintenance, etc.,
- review the calculations and assumptions used to obtain the GHG data, data and information related to sustainability monitoring parameters and ER,
- identify if the quality control and quality assurance procedures are in place to prevent or correct errors or omissions in the reported parameters.

In summary, according to the registered GS PDD of 29/03/2011 (IRL 06), and the approved project design change (IRL 11), the project activity is well operational in all three clusters (Shanxi, Guizhou and Enshi state) and the same has been confirmed via stakeholder feedback during the site visit.

Secondly, the site visit and stakeholder feedback shows that the project activity continues to achieve the intended social, economic, and environmental impacts. The stakeholder interviewed complimented the project's continued positive social impacts. Environmentally, the project achieves all positive impacts outlined in the PDD, as stove sales continue to reduce pressure on inefficient use and burning of fossil fuel coal. Economically, manufacturing partners continue to improve the limited incomes of impoverished rural Chinese families, and are also helping to improve their indoor air quality and health. Further details can be found in the kitchen survey reports (IRL28, 29, 30). Information on sustainable development indicators can also be found in chapter 2.5 of this report.

A list of all persons interviewed is included in the IRL attached as Annex 2 to this report.

1.7 Resolution of Clarification and Corrective and Forward Action Requests

The objective of this phase of the verification is to resolve the requests for corrective actions, clarifications, and any other outstanding issues which need to be clarified for TÜV SÜD`s conclusion on the achieved emission reductions. The CARs and CRs raised by TÜV SÜD are resolved during communication between the client and TÜV SÜD. To guarantee the transparency of the verification process, the concerns raised and responses that have been given are documented in detail in the List of Findings that is attached as Annex 1 to this report.

1.8 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 (Verification and Certification Conclusion) made by the CB "Environment and Energy".

South Asia

2 CARBON VERIFICATION AND REPORTING

In the following sections, the results of the verification are stated. The verification results relate to the project performance as documented and described in the final PDD and Approved project design change (IRL 11) and final Monitoring Report. The verification findings for each verification subject are presented below.

2.1 FARs from Validation / Previous Verification

The verification team confirms that all FARs presented in the validation report and/or verification reports have been correctly addressed by the PPs.

South Asia

Remaining Requests from Previous Verifications	Summary of project owner response	Audit team Conclusion and IRL
Forward action request No. 1: Please make sure SD indicators will be reported in each monitoring report even though SD monitoring might be less frequent than issuance request.	SD indicators are reported on in Section 9 of the Monitoring Report.	☑ The audit team confirmed that the SD indicators has been monitored and well addressed in the periodic kitchen survey. Monitoring results has been summarized in the updated MR. (IRL 28, 29, 30)
Forward action request No. 2: At each time of verification the verification DOE shall validate and confirm that eligibility of the project activity is not undermined by the post-registration changes.	N/A	It is not applicable since there is not post registation changes during this monitoring period.
Forward action request No. 3: As the footnote no.1 and the paper 'Bottom-up estimate of biomass burning in Mainland China' indicate, the crop residue used as fuel accounts for 25% of the total biomass, a fraction much higher than the baseline level of 2% HHs use biomass. GS requires that during future requests for issuances it should be discussed in the monitoring report and verified by DOE whether new households added to the cluster(s) defined in registered PDD meet the specifications of the cluster(s) particularly 'coal as predominant fuel for cooking'. If kitchen surveys show different fuel mix where large amount of biomass is consumed as cooking fuel then a new cluster shall be formed and new baseline shall be established and validated.	Kitchen surveys show that for all clusters coal is used as the predominant fuel for cooking. See Annexes 01, 02, 03, 04, 05, 06 for Kitchen Survey Analysis and Reports for each cluster.	☑ During the site visit and document review, the audit team confirmed all newly added improved stoves are within those three clusters (Shanxi, Guizhou and Enshi state), in which all clusters has been validated as "coal as predominant fuel for cooking" in the registered GS PDD as well as the approved project design change (IRL 11, 25, 26, 27). In addition, there is no mew cluster post added during this monitoring period.
Forward action request No. 4: Post-registration Changes requiring the creation	N/A	It is not applicable since there is not post registation changes during this monitoring period.

South Asia

Remaining Requests from Previous Verifications	Summary of project owner response	Audit team Conclusion and IRL
of new clusters that were not described in the original PDD must attain formal authorization following the Requirements of the Gold Standard Procedures For Approval of Design Changes 28/12/2010. Specific authorization is provided to include: · Household biomass cooking and heating stoves manufactured by companies other than Jinqilin · Institutional biomass cooking and heating stoves manufactured by companies other than Jinqilin · Other improved cooking and heating technologies that displace baseline coal consumption		
Forward action request No. 5: The project developer will have to identify whether the project will use a fixed or evolving baseline for new clusters.	No new clusters have been added this issuance period.	☑ The audit team confirmed that no new cluster was involved in this monitoring period.
Forward action request No. 1 (from 3rd verification report) The follow up with users in major sales regions performed by the provider in order to collect information on stoves that require maintenance is to be checked during next verification process as well as the result of actions undertaken.	The PP has checked the improved stove maintenance in Enshi Region, and interviewed with Anshun stove manufacturer, Huifeng from Guizhou Province. The fact is that Huifeng, has offered an additional grate with each stove sold at no additional charge. In addition, the company is following up with users in major sales regions to collect information on stoves that require maintenance. Huifeng will offer repairs to all stoves that require it. Once again, warranty cards provide contact information for end users to contact the manufacturer directly if they are dissatisfied with	The audit team has reviewed the stove service cards from three clusters (IRL58,59,60), and considered this channel worked. DOE has reviewed the Usage Surveys conducted in the 4th verification. It is found that the question about broken frequency and period was not reported. DOE will keep FAR No.1 open that PP shall improve survey questionnaire to report the broken frequency and

South Asia

Remaining Requests from Previous Verifications	Summary of project owner response	Audit team Conclusion and IRL
	their stove or its performance – the manufacturer also services stove repairs through this channel. Relevant manufacturers in three clusters, Jinqilin, Huifeng and Zhiqi are also exploring alternative stove materials that will extend the life of the grate. Stove service cards are being submitted to the DOE. For any maintenance of the stoves the user can just call the company.	period in the future Usage Surveys.

South Asia

2.2 Project Design Change

The project activity replaces inefficient “traditional” coal-burning stoves with improved biomass stove technologies. In the original GS PDD, theimplemented project is in Shanxi province only, it reduces greenhouse gases (GHGs) by replacing household use of high emissions fuels such as coal with readily available excess renewable agricultural residues. Similarly, the proposed design change replaces baseline inefficient “traditional” coal-burning stoves with improved biomass stoves that function as both cooking and heating technologies. The new project sites are in the coal endemic areas of Enshi state of Hubei province, and Guizhou province. The combined cooking and heating stoves installed in these regions reduce GHGs by replacing household use of coal with readily available biomass, which mostly consists of renewable woodfuel. Combined with the 2nd verification (IRL 9), the project design change was approved during GS Request Review on 30 April 2013 (IRL11).

2.3 Project Implementation in accordance with the registered Project Design Document

The project activity in Shanxi Province is fully implemented according to the descriptions presented in the registered GS PDD of 01/04/2011. However, PP has proposed the project design change as mentioned in chapter 2.2, and finally approved by GS on April 30, 2013. The detailed validation has been addressed in the chapter 2.2.

According to the registered GS PDD of 29/03/2011 (IRL 06), and the approved project design change (IRL 11), the project activity is well operational in all three clusters (Shanxi, Guizhou and Enshi state) and the same has been confirmed during the second on-site visiting. Therefore, the verifier confirmed through the visual inspection that all physical features of the GS project activity including data collecting systems and storage have been implemented in accordance with the registered PDD.

2.4 Compliance of the Monitoring Plan with the Monitoring Methodology

The monitoring plan of the original cluster (Shanxi Province) and newly added clusters (Guizhou Province and Enshi state) is in accordance with the GS Methodology for Improved Cook-stoves and Kitchen Regimes, version 02, applied by the proposed GS project activity. Neither a revision nor a deviation to the monitoring plan has been requested to the GS TAC.

2.5 Compliance of the Monitoring with the Monitoring Plan

The monitoring has been carried out in accordance with the monitoring plan contained in the registered GS PDD. All parameters were monitored and determined as per the Monitoring Plan.

The verification of the parameters required by the monitoring plan is provided as follows:

Data / Parameter:	*Ny,i,Shanxi*
Data unit:	Stoves
Description:	Number of stoves sold in year y of technology i in Shanxi Province
Source of data used:	The Project Sales Record (TSR) provides a conservative record of Project sales. The sales record is used to create the Project Database, which re-organizes sales data and tracks the quantity of stoves sold each

<table>
<tr><td></td><td>day by cluster. These records are kept in Microsoft Excel. (IRL 39)</td></tr>
<tr><td>Means of verification/Comments:</td><td>Local stove manufacture (Jinqilin) has established recordkeeping systems that enable them to meet the monitoring requirements in GS VER Methodology Page 22: all stove sales record the name, phone, and address of all bulk purchases, and the same information for households (as many as possible). If a stove is returned for any reason, or replaced with a new stove, the Partners ensure that the electronic database is updated to ensure no double counting.</td></tr>
<tr><td>Cross-check</td><td>During the site visits, the audit team confirmed the number of stoves sold by the local manufacturer (Jinqilin), via crosschecking with different credible sources (IRL 40, 41, 42)
<table>
<tr><td>Period</td><td>Total Sale Record</td><td>Cross checking</td></tr>
<tr><td>2009-2010</td><td>13,403 (1st verification)</td><td>1st verification report by DNV</td></tr>
<tr><td>01/10/2010 to 15/05/2012</td><td>12,586 (2nd verification)</td><td>2nd verification report by TUV SUD</td></tr>
<tr><td>16/05/2012 to 28/02/2013</td><td>3,890 (3rd verification)</td><td>3rd verification report by TUV SUD</td></tr>
<tr><td>2013 (until 31 Dec)</td><td>1,047</td><td>1047 stoves were sold with carbon finance. Each county/village government has issued statement to clearly report the number stoves received.</td></tr>
<tr><td>2014 (until 28 Feb)</td><td>0</td><td></td></tr>
<tr><td>2015 (until 28 Feb)</td><td>0</td><td></td></tr>
<tr><td>Total</td><td>30,926</td><td>The audit team confirmed that the evidence chain is complete and credible.</td></tr>
</table></td></tr>
</table>

Data / Parameter:	*Ny,i,Guizhou*
Data unit:	Stoves
Description:	Number of stoves sold in year y of technology i in Guizhou Province
Source of data used:	The Project Sales Record (TSR) provides a conservative record of Project sales. The sales record is used to create the Project Database, which re-organizes sales data and tracks the quantity of stoves sold each day by cluster. These records are kept in Microsoft Excel. (IRL 43)
Means of verification/Comments:	Local stove manufacture (Huifeng) has established recordkeeping systems that enable them to meet the monitoring requirements in GS VER

South Asia

<table>
<tr><td></td><td>Methodology Page 22: all stove sales record the name, phone, and address of all bulk purchases, and the same information for households (as many as possible). If a stove is returned for any reason, or replaced with a new stove, the Partners ensure that the electronic database is updated to ensure no double counting.</td></tr>
<tr><td>Cross-check</td><td>During the site visits, the audit team confirmed the number of stoves sold by the local manufacturer (Huifeng), via crosschecking with different credible sources (IRL 44, 45, 46)
<table>
<tr><th>Period</th><th>Total Sale Record</th><th>Cross checking</th></tr>
<tr><td>05/01/2009 to 15/05/2012</td><td>31,886</td><td>2nd verification report by TUV SUD</td></tr>
<tr><td>16/05/2012 to 28/02/2013</td><td>9,857 (3rd verification)</td><td>3rd verification report by TUV SUD</td></tr>
<tr><td>2013 (until 31 Dec)</td><td>12,585</td><td>In this monitoring period, the local manufacturer (Huifeng) has won the subsidiary contracts (2,528 stoves) from local governments (County level) by bidding process, then provided the stoves and delivered to the end users. The received confirmation and invoice to government for payment.
7,766 stoves were sold with carbon financing. Each county/village government has issued statement to clearly report the number stoves received.
2,291 stoves were sold on their own, the receipt and distributor confirmation can be cross checked.</td></tr>
<tr><td>2014</td><td>5,833</td><td>3,500 stoves were ordered by government subsidiary contracts, crosschecked by the received confirmation and invoice to government for payment.
2,333 stoves were sold on their own, the receipt and distributor confirmation can be cross checked.</td></tr>
<tr><td>2015 (until 28 Feb)</td><td>900</td><td>900 stoves were sold on their own, the receipt and distributor confirmation can be cross checked.</td></tr>
<tr><td>Total</td><td>61,061</td><td>The audit team confirmed that the evidence chain is complete and credible.</td></tr>
</table></td></tr>
</table>

South Asia

<table>
<tr><td>Data / Parameter:</td><td>Ny,i,Enshi</td></tr>
<tr><td>Data unit:</td><td>Stoves</td></tr>
<tr><td>Description:</td><td>Number of stoves sold in year y of technology i in Enshi state of Hubei Province</td></tr>
<tr><td>Source of data used:</td><td>The Project Sales Record (TSR) provides a conservative record of Project sales. The sales record is used to create the Project Database, which re-organizes sales data and tracks the quantity of stoves sold each day by cluster. These records are kept in Microsoft Excel. (IRL 47)</td></tr>
<tr><td>Means of verification/Comments:</td><td>Local stove manufacture (Zhiqi) has established recordkeeping systems that enable them to meet the monitoring requirements in GS VER Methodology Page 22: all stove sales record the name, phone, and address of all bulk purchases, and the same information for households (as many as possible). If a stove is returned for any reason, or replaced with a new stove, the Partners ensure that the electronic database is updated to ensure no double counting.</td></tr>
<tr><td>Cross-check</td><td>During the site visits, the audit team confirmed the number of stoves sold by the local manufacturer (Zhiqi), via crosschecking with different credible sources (IRL 48, 49, 50)
<table>
<tr><td>Period</td><td>Total Sale Record</td><td>Cross checking</td></tr>
<tr><td>18/11/2008 to 15/05/2012</td><td>16,443</td><td>2nd verification report by TUV SUD</td></tr>
<tr><td>16/05/2012 to 28/02/2013</td><td>5,968 (3rd verification)</td><td>3rd verification report by TUV SUD</td></tr>
<tr><td>2013 (until 31 Dec)</td><td>5,028</td><td>In this monitoring period, the local manufacturer (Zhiqi) has won the subsidiary contracts (627 stoves) from local governments (County level) by bidding process, then provided the stoves and delivered to the end users. The received confirmation and invoice to government for payment.
4,401 stoves were sold with carbon financing. Each county/village government has issued statement to clearly report the number stoves received and bank transfer statement.</td></tr>
<tr><td>2014</td><td>7,689</td><td>1,379 stoves were ordered by government subsidiary contracts, crosschecked by the received confirmation and invoice to government for payment.
6,310 stoves were sold on their own, the receipt and distributor confirmation can be cross checked.</td></tr>
<tr><td>2015 (until</td><td>1,655</td><td>317 stoves were ordered by government sub-</td></tr>
</table></td></tr>
</table>

	28 Feb)		sidiary contracts, crosschecked by the received confirmation and invoice to government for payment. 1,338 stoves were sold on their own, the receipt and distributor confirmation can be cross checked.	
	Total	36,783	The audit team confirmed that the evidence chain is complete and credible.	

Data / Parameter:	*Uy,i,Shanxi*
Data unit:	Fraction %
Description:	Cumulative annual usage rate for stove age y of stove technology i in Shanxi Province
Source of data used:	Usage survey & report: Jinqilin Stove Ages 0-1; Usage survey & report: Jinqilin Stove Ages 1-2; Usage survey & report: Jinqilin Stove Ages 2-3; Usage survey & report: Jinqilin Stove Ages 3-4; Usage survey & report: Jinqilin Stove Ages 4-5 Years. (IRL 33)
Means of verification/Comments:	A Usage Survey has been undertaken by Impact Carbon and BUCT monitoring team once a year for sales made in the first year of the project, to establish the drop-off rates in stove usage over time. The sample size is as defined for the baseline KS, selected randomly from users having made their purchase in the first year of the project.
Cross-check	The audit team has reviewed 100 samples, which was randomly taken by the PP as per the applied methodology. Data for these samples were crosschecked with the usage surveys results (IRL 33). All data was found consistent. Meanwhile, the verifier also interviewed with local officer during the site visit, in order to confirm the veracity of the data. It was found that the sampling households picked up by verifier is real, and the improved stove was in use. Thus, the audit team confirmed that the results of the usage survey are consistent with the observations during the site visit.

Data / Parameter:	*Uy,i,Guizhou*
Data unit:	Fraction %
Description:	Cumulative annual usage rate for stove age y of stove technology i in Guizhou Province
Source of data used:	Usage survey & report: Huifeng Stove Ages 0-1; Usage survey & report: Huifeng Stove Ages 1-2; Usage survey & report: Huifeng Stove Ages 2-3; Usage survey & report: Huifeng Stove Ages 3-4;

	Usage survey & report: Huifeng Stove Ages 4-5 Years. (IRL 34)
Means of verification/Comments:	A Usage Survey has been undertaken by Impact Carbon and BUCT monitoring team once a year for sales made in the first year of the project, to establish the drop-off rates in stove usage over time. The sample size is as defined for the baseline KS, selected randomly from users having made their purchase in the first year of the project.
Cross-check	The audit team has reviewed 100 samples, which was randomly taken by the PP as per the applied methodology. Data for these samples were crosschecked with the usage surveys results (IRL 34). All data was found consistent. Meanwhile, the verifier also interviewed with local officer during the site visit, in order to confirm the veracity of the data. It was found that the sampling households picked up by verifier is real, and the improved stove was in use. Thus, the audit team confirmed that the results of the usage survey are consistent with the observations during the site visit.

Data / Parameter:	*Uy,i,Enshi*
Data unit:	Fraction %
Description:	Cumulative annual usage rate for stove age y of stove technology i in Enshi state of Hubei Province
Source of data used:	Usage survey & report: Zhiqi Stove Ages 0-1; Usage survey & report: Zhiqi Stove Ages 1-2; Usage survey & report: Zhiqi Stove Ages 2-3; Usage survey & report: Zhiqi Stove Ages 3-4; Usage survey & report: Zhiqi Stove Ages 4-5 Years. (IRL 35)
Means of verification/Comments:	A Usage Survey has been undertaken by Impact Carbon and BUCT monitoring team once a year for sales made in the first year of the project, to establish the drop-off rates in stove usage over time. The sample size is as defined for the baseline KS, selected randomly from users having made their purchase in the first year of the project.
Cross-check	The audit team has reviewed 100 samples, which was randomly taken by the PP as per the applied methodology. Data for these samples were crosschecked with the usage surveys results (IRL 35). All data was found consistent. Meanwhile, the verifier also interviewed with local officer during the site visit, in order to confirm the veracity of the data. It was found that the sampling households picked up by verifier is real, and the improved stove was in use. Thus, the audit team confirmed that the results of the usage survey are consistent with the observations during the site visit.

Data / Parameter:	$AF_{py,Dcoal,y,i,Shanxi}$
Data unit:	kg/day per household

South Asia

Description:	Net quantity of coal consumed per day in the project activity by traditional coal stoves in project households with improved stove technology i that is of age y years in Shanxi Province
Source of data used:	Kitchen Performance Test (KPT)/ Aging KPT (IRL 25, 28) The sampling method employed was clustered random sampling of 9 villages, 72 households from the sales database. Despite the dispersed geography of rural households the cooking and heating patterns in the target population are homogenous, as demonstrated in the PDD and during previous survey and testing.
Means of verification/Comments:	Annual coal consumption are based on the mean value (according to 90/30 rule) for daily baseline coal use, annual usage drop-off rates (*Uy,i,Shanxi*), and weighted average use months derived from self-reported heating months ($T_{heating\ months,\ Shanxi}$), and self-reported actual months stoves used ($T_{actual\ using\ months,\ Shanxi}$).
Cross-check	The KPT results provided in the report were cross checked with the filled KPT questionnaires (Fuel Use Monitoring Field Sheet, IRL 25, 31). Data was found consistent in all the documents. The same was also confirmed by the verifier during the desk review interviewed with beneficiary households representatives. Based on the specific local and statistic expertise from BUCT monitoring team as third party, the audit team confirmed the the presented KPT reports are credible. (IRL 24, 25)

Data / Parameter:	$AF_{py,Dcoal,y,i,Guizhou}$
Data unit:	kg/day per household
Description:	Net quantity of coal consumed per day in the project activity by traditional coal stoves in project households with improved stove technology i that is of age y years in Guizhou Province
Source of data used:	Kitchen Performance Test (KPT) (IRL 26, 29) The sampling method employed was clustered random sampling of 11 villages, 72 households from the sales database. Despite the dispersed geography of rural households the cooking and heating patterns in the target population are homogenous.
Means of verification/Comments:	Annual coal consumption are based on the mean value (according to 90/30 rule) for daily baseline coal use, annual usage drop-off rates (*Uy,i,Guizhou*), and average self-reported actual months stoves used during which the Project stove is used ($T_{actual\ using\ months,\ Guizhou}$).
Cross-check	The KPT results provided in the report were cross checked with the filled KPT questionnaires (Fuel Use Monitoring Field Sheet, IRL 26, 31). Data was found consistent in all the documents. The same was also confirmed by the verifier during the desk review interviewed with beneficiary households representatives. Based on the specific local and statistic expertise from BUCT monitoring team as third party, the audit team confirmed the the presented KPT reports are credible. (IRL 24, 26)

South Asia

Data / Parameter:	$AF_{py,Dcoal,y,i,Enshi}$
Data unit:	kg/day per household
Description:	Net quantity of coal consumed per day in the project activity by traditional coal stoves in project households with improved stove technology i that is of age y years in Enshi state of Hubei Province
Source of data used:	Kitchen Performance Test (KPT) (IRL 27, 30) The sampling method employed was clustered random sampling of 11 villages, 72 households from the sales database. Despite the dispersed geography of rural households the cooking and heating patterns in the target population are homogenous.
Means of verification/Comments:	Annual coal consumption are based on the mean value (according to 90/30 rule) for daily baseline coal use, annual usage drop-off rates (*Uy,i,Enshi*), and average self-reported actual months stoves used during which the Project stove is used ($T_{actual\ using\ months,\ Enshi}$).
Cross-check	The KPT results provided in the report were cross checked with the filled KPT questionnaires (Fuel Use Monitoring Field Sheet, IRL 27, 31). Data was found consistent in all the documents. The same was also confirmed by the verifier during the site visit interviews with beneficiary households. Based on the specific local and statistic expertise from BUCT monitoring team as third party, the audit team confirmed the the presented KPT reports are credible. (IRL 24, 27)

Data / Parameter:	$T_{usage\ months,Shanxi}$
Data unit:	Months
Description:	Average self-reported months of usage with a traditional coal stove in cluster Shanxi.
Source of data used:	Non-heating months (as measured for Age 0-1) are 7.75 months (IRL 51). Actual months of usage as measured in the Aging KPT for Age 2+ (IRL 25) are 9.54 months.
Means of verification/Comments:	During the site visit and interviewing with end users, it is common for users to continue Jinqilin use beyond the non-heating months. Then the monitoring team suveyed each household for the parameter “actual months of stove usage” in stead of “heating months” as this is more precise for the period of the improved stove used. The project uses a weighted value (8.93 months) on the basis of sales records during that period, to arrive at annual project fuel savings value to account for emission reductions in this cluster.
Cross-check	Based on the specific local and statistic expertise from BUCT monitoring team as third party, the audit team confirmed the household suvey are performed in accordance with the original PDD. (IRL 28, 31, 32) All data collected as part of monitoring was archived electronically and will be kept at least for 2 years after the end of the last crediting period.

South Asia

Data / Parameter:	$T_{usage\ months,Enshi}$
Data unit:	Months
Description:	Average self-reported months of heating in cluster Enshi.
Source of data used:	Ongoing household and kitchen surveys investigated the self-reported heating months during a whole year. (IRL 27, 30)
Means of verification/Comments:	In order to approach precise estimation for the average heating months in a year derived from ongoing the kitchen survey, the project uses a weighted value (4.94 months) on the basis of sales records during that period.
Cross-check	Based on the specific local and statistic expertise from BUCT monitoring team as third party, the audit team confirmed the household suvey are performed in accordance with the original PDD as well as approved project design change. (IRL 31, 32) All data collected as part of monitoring was archived electronically and will be kept at least for 2 years after the end of the last crediting period.

Data / Parameter:	$T_{usage\ months,Guizhou}$
Data unit:	Months
Description:	Average self-reported months of heating in cluster Guizhou.
Source of data used:	Ongoing household and kitchen surveys investigated the self-reported heating months during a whole year. (IRL 26, 29)
Means of verification/Comments:	In order to approach precise estimation for the average heating months in a year derived from ongoing the kitchen survey, the project uses a weighted value (4.41 months) on the basis of sales records during that period.
Cross-check	Based on the specific local and statistic expertise from BUCT monitoring team as third party, the audit team confirmed the household suvey are performed in accordance with the original PDD as well as approved project design change. (IRL 31, 32) All data collected as part of monitoring was archived electronically and will be kept at least for 2 years after the end of the last crediting period.

Data / Parameter:	$LE_{pj,y,i,c}$
Data unit:	tCO_2e/stove per lifetime of stove
Description:	One-time leakage emission factor applied to stove sales during project activity year “y” in cluster “c” by transport and/or production of project technologies and activities “i” .
Source of data used:	Leakage Asessment Report (IRL 57)
Means of verification/Comments:	Based on the local expertise and reasonable assumptions from Impact Carbon, the audit team confirmed the leakage assessment reports are convincible.

South Asia

Cross-check	-

As for $AF_{py,Apellet,y,i,c}$, $EF_{Pellet\ Machine,i,c}$, $EF_{Pellet\ Machine,i,c}$, $EC_{EL,y,i,c}$, $EC_{pj,y,i,c}$, $TDL_{y,i,c}$ and "New stove performance" indicated in the registered GS PDD are not relevant to the current verification period, since no pellets were produced and identified during the site visit.

Sustainability Monitoring Parameters

Component Indicators	Score (+,0,-)	Assessment and Conclusion
Local/regional/global environment		
Air quality* (emissions other than GHGs)	+	As stated in the GS PDD, improved stoves generally reduce indoor air pollution and improve air quality. In Shanxi Province, Quarterly Kitchen Survey conducted by CAREI and BUCT monitoring team in Shanxi Province further assessed air quality impacts of the improved stoves during this monitoring period. 30 households each quarter, total 120 housholds were surveyed. (IRL 28) As result, 100% of users reported their improved stoves reduce cooking time, fuel use, fuel cost, smoke, symptoms of coughing and eye irritation, and are easier to use. The audit team confirmed the statement above by stove performance demonstration, and interviewed with Ms. Han Wenping as local stove manufacturer. In Guizhou Province, After project design change approval, Kitchen Survey conducted by CAREI and BUCT monitoring team further assessed air quality impacts of the improved stoves. Total 240 households were surveyed. (IRL 29) The audit team confirmed the statement above by stove performance demonstration, and interviewed with Mrs. Li Hui as local stove manufacturer. In Enshi state, After project design change approval, Kitchen Survey conducted by CAREI and BUCT monitoring team further assessed air quality impacts of the improved stoves. Total 150 households were surveyed. (IRL 30) The audit team confirmed the statement above by stove performance demonstration, site visit 42 households in person, and interviewed with Mr. Liao Guangshun as local stove manufacturer. (IRL 2, 3)
Sub total	+	
Social sustainability and development		
Livelihood of the poor* (including poverty alleviation, distributional equity, and access to essential services)	+	The impact of the Project on livelihood of the poor was monitored by the amount of money saved by Project stove users based on the price of coal and the amount of fuel savings recorded in the Kitchen Performance Test. The Project continues to increase the spending power of lower income residents by reducing the amount families must spend on coal. In Shanxi Province, 4-Year Aging Kitchen Performance Test conducted by CAREI and BUCT monitoring team in Shanxi Province in April, 2015 (IRL 25), reported that the average household using a Jinqilin stove saves 2.83 tons of coal per year. The average self-reported coal price in Shanxi was 694 RMB/ton, therefore the Jinqilin stoves saves households an average of 1,961 RMB per year. The audit team confirmed the statement above by interviewing with Mr. Zhang Yue as monitoring team member, and coal price public available (IRL 66).

South Asia

		<u>In Guizhou Province,</u> 2-Year Aging Kitchen Performance Test conducted by CAREI and BUCT monitoring team in Guizhou Province in April, 2015 (IRL 26), reported that the Huifeng stoves saves households an average of 2,152 RMB per year. The audit team confirmed the statement above by interviewing with Mr. Zhang Yue as monitoring team member. <u>In Enshi Autonomy State,</u> 2-Year Aging Kitchen Performance Test conducted by CAREI and BUCT monitoring team in Enshi Autonomy State in April, 2015 (IRL 27), reported that the Zhiqi stove saves households an average of 2,205 RMB per year. The audit team confirmed the statement above by interviewing with Mr. Zhang Weihao as monitoring team member, and coal price public available. The audit team confirmed the statement above by site visit 42 households in person. In summary, the waste wood and biomass residues in stead of coal as main fuel of improved stoves in the project activity, it not only assists in expanding the market for cleaner burning and more efficient stoves, but also helps to ameliorate the large economic burden resulting from a reliance on coal for year round cooking needs.
Access to Affordable and Clean energy services*	+	PPs monitored the access all three clusters (Shanxi, Guizhou and Enshi) provides for rural households to efficient energy technologies through sales records. Between March 1, 2013 and Feb 28, 2015, the Project provided Chinese residents with a total of 34,737 stoves (1,047 in Shanxi, 14,372 in Enshi, and 19,318 in Guizhou) within this monitoring period. This is an average of 1,021 efficient stoves per month. Monthly sales records has been cross-checked (IRL 39-50).
Subtotal	**+**	
TOTAL	**+**	

*The asterisk indicators shall monitored in sustainable development monitoring plan.

Assessment of the monitoring of the Sustainability Indicators:

Thus Verification team confirms that

- the development and maintenance of records and reporting procedures are in accordance with the registered monitoring plan;
- the monitoring activities comply with the monitoring plan of the registered GS PDD (version 04, 01-04-2011, and approved project design change, 30/04/2013);
- all parameters that are baseline, project and leakage emission parameters are monitored as described in the registered monitoring plan, and approved project design change, 30/04/2013;
- all Gold Standard indicators are found monitored as per the registered GS PDD (version 04, 01-04-2011, and approved project design change, 30/04/2013).

The frequency of monitoring and the accuracy of the information obtained through surveys and tests are in line with the registered monitoring plan and the methodology as well.

South Asia

2.6 Assessment of Data and Calculation of Greenhouse Gas Emission Reductions

All data has been available and all the parameters have been monitored in accordance with the registered monitoring plan. The reported data have been cross-checked against other sources available as explained above in chapter 2.5.

The verifier confirms that the methods and formulae used to obtained the baseline, project and leakage emissions are appropriate. The same has been done in accordance with the methods and formulae described in the registered monitoring plan and applicable GS methodology. The verifier confirms that the monitoring report includes all parameters and the monitored data at the intervals required by the methodology and GS PDD.

The verifier confirms that all the assumptions, emission factors and default values (ex-ante values from GS PDD) have been correctly justified. All the emission factors and default values are explicitly mentioned in the monitoring report.

The Emissions Reduction (ER) Calculator (IRL 67) calculates total emissions reductions on a quarterly basis for each stove in the Project Database. The ER Calculator is run separately for each cluster of stoves defined for the project.

PP has submitted the Detailed Project Database to the audit team. During the site visit, the audit team has verified the distribution records with the sales records available on-site on a sample basis. The audit team has reviewed the unique identification data of 42 beneficiary households and confirmed that data was found consistent in Detailed Project Database and the sales records (IRL39, 43, 47) .

The audit team could confirmed that by the end of this monitoring period, total 30,926 stoves in Shanxi Province, 36,783 stoves in Enshi state and 61,061 stoves in Guizhou Province have been retroactively included since 2009.

In the ‘ER Calculations’ worksheet (IRL 61, 62, 63), aggregate quarterly stove use (stove-years) is multiplied by ERs per stove-year (tCO2e/stove-year) to calculate total ERs on a quarterly basis. The values from the ‘ER Calculations’ worksheet provides a summary of ERs for the current verification crediting period.

Based on the information we have seen and evaluated, we confirm that the project activity achieved the verified emission reductions in this monitoring period are 975,704 t CO_2e, including

Baseline emissions: (Shanxi Province)	246, 659 tCO_2e
Baseline emissions: (Guizhou Province)	441, 383 tCO_2e
Baseline emissions: (Enshi State of Hubei Province)	287, 662 tCO_2e
Project emissions:	0 tCO_2e
Leakage:	0 tCO_2e

South Asia

Annex 1
List of Findings

List of Findings - Compilation and Resolutions

Version: final

Project Title: Clean and Efficient Cooking and Heating Project, China

South Asia

Definitions	
Shall / Should / May	In addition to the definitions contained in the Glossary of CDM terms, the following terms apply in the VVS (VVS/10): Shall is used to indicate requirements to be followed; Should is used to indicate that among several possibilities, one course of action is recommended as particularly suitable; May is used to indicate what is permitted.
Credible	Information is credible if it is authentic and is able to inspire belief or trust, and the willingness of persons to accept the quality of evidence. (VVS/17)
Reliable	Information is reliable if the quality of evidence is accurate and credible and able to yield the same results on a repeated basis. (VVS/17)
CAR	The DOE shall raise a CAR if one of the following situations occur: (VVS/220) (a) Non-compliance with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient; (b) Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants; (c) Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions; (d) Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.
CL	The DOE shall raise a CL if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met. (VVS/221)
FAR	The DOE shall raise a FAR during verification for actions if the monitoring and reporting require attention and/or adjustment for the next verification period. (VVS/223)

South Asia

Compilation and Resolutions of CARs, CRs and FARs

Corrective Action Requests by verification team		
	Comments and Results	Conclusion and IRL
Issue	Reported emission reductions	☑ Finding Closed IRL 61, 62, 63, 67, 68
Requirement	GS Principle, Accuracy and conservativeness	
Corrective Action Request	**Corrective Action Request No. 1** 1, PP shall finalize the number of the improved stoves sold in this monitoring period in the sales records, to be in line with the name list in Enshi and Guizhou clusters in 2014, respectively; 2, PP shall finalize conservatively the number of improved stoves sold among all three clusters, respectively, into the ER summary calculation spreadsheet.	
Response	1. The final sales figure of the improved stoves sold in this monitoring period for Enshi and Guizhou clusters are 14,372 and 19,318. The same has been corrected in the MRv3 and is in line with the sales records. 2. The numbers of improved stoves sold has been finalized conservatively among all three clusters respectively, into the ER summary calculation spreadsheet.	
Assessment Means of verification	The information provided in the revised MR is consistent with the evidences verified during this verification process in particular to those evidences collected during the site visit. The verifier confirms that the methods and formulae used to obtain daily coal consumption are correctly justified, and the relevant assumptions and default values are explicitly mentioned in the calculation spreadsheet. (IRL 61, 62, 63)	
Changes in the monitoring report or supporting annexes	The number of the stoves involved in all three clusters has been transparently documented, while MR and ER spreadsheet have been updated to reflect the changes, respectively.	

South Asia

Clarification Requests by verification team		
	Comments and Results	Conclusion and IRL
Issue	After-sale service	IRL 58, 59, 60 FAR No.1
Requirement	Methodology for Improved Cook-stoves and Kitchen Regimes V.02 Section III	
Corrective Action Request	**Corrective Action Request No. 2** The follow up with users in major sales regions performed by the provider in order to collect information on stoves that require maintenance is to be checked during next verification process as well as the result of actions undertaken.	
Response	The PP has checked the improved stove maintenance in Enshi Region, and interviewed with Anshun stove manufacturer, Huifeng from Guizhou Province. The fact is that Huifeng, has offered an additional grate with each stove sold at no additional charge. In addition, the company is following up with users in major sales regions to collect information on stoves that require maintenance. Huifeng will offer repairs to all stoves that require it. Once again, warranty cards provide contact information for end users to contact the manufacturer directly if they are dissatisfied with their stove or its performance – the manufacturer also services stove repairs through this channel. Relevant manufacturers in three clusters, Jinqilin, Huifeng and Zhiqi are also exploring alternative stove materials that will extend the life of the grate. Stove service cards are being submitted with these responses as Annex 16,17 and 18. For any maintenance of the stoves the user can call the company.	
Assessment	The PP clarification is accepted and in accordance with the information gathered during the interviews performed in the 4th site visit.	

South Asia

Clarification Requests by verification team		
Means of verification	The audit team has reviewed the stove service cards from three clusters (IRL58, 59, 60), and considered this channel worked. DOE has reviewed the Usage Surveys conducted in the 4th verification. It is found that the question about broken frequency and period was not reported.	
Changes in the monitoring report or supporting annexes	DOE will keep FAR No.1 open that PP shall improve survey questionnaire to report the broken frequency and period in the future Usage Surveys. The follow up with users in major sales regions performed by the provider in order to collect information on stoves that require maintenance is to be checked during next verification process as well as the result of actions undertaken. Meanwhile, PP shall improve survey questionnaire to report the broken frequency and period in the future Usage Surveys.	

South Asia

Annex 2

Information Reference List

Project title: Clean and Efficient Cooking and Heating Project, China
Document revision number: 04

Interviewed Persons during onsite audit:

16.03.2015 to 19.03.2015

Name	Function	Company
Mr. Liao Guangshun	General manager	Enshi Zhiqi Biomass Energy Science and Technology Development Company Ltd.
Mr. Chen Xiaofu	Director	China Association for Rural Energy Industries (CAREI)
Mr. Zhang Yue	Monitoring team member	Beijing University of Chemical Technology (BUCT)
Mr. Tan Yongshuang	Office director	Enshi Ecology and Energy Bureau

09.04.2015 Morning

Name	Function	Company
Ms. Han Wenping	General manager	Shanxi Jinqilin Energy Technology Company Ltd.
Ms. Zhang Jia	Administration	Shanxi Jinqilin Energy Technology Company Ltd.
Ms. Han Xiuling	Accountant	Shanxi Jinqilin Energy Technology Company Ltd.
Mr. Chen Xiaofu	Director	CAREI
Mr. Zhang Yue	Monitoring team member	BUCT

09.04.2015 Afternoon

Name	Function	Company
Ms. Li Hui	President of Board	Anshun Huifeng Energy Saving Stove Company Ltd. (AHESS)
Ms. Wang Wei	Accountant	AHESS
Mr. Xiaofu Chen	Director	CAREI
Mr. Zhang Yue	Monitoring team member	BUCT

Other Interviewed Persons (not during onsite audit):

Name	Function	Institution/Company	Date of Interview
Mr. Xiaofu Chen	Director	CAREI	03/2015-12/2015
Mr. Zhang Weihao	Consultant	Asia Clean Air	03/2015-12/2015
Mr. Sandeep Melana	Consultant	Impact Carbon	03/2015-12/2015

Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date (dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
0.	Gold Standard	"Clean and Efficient Cooking and Heating Project, China" www.impactcarbon.org/our-projects/stoves-in-china/	Up to date	*Reference to the PDD/MR chapter or CDM requirement*
1.	Gold Standard	Indicative Programme, Baseline, and Methodology for Improved Cook-Stoves and Kitchen Regimes, Version 02	08/02/2010	
2.	TÜV SÜD	Participant list of on-site interviews	16/03-19/03/2015, 09/04/2015	
3.	TÜV SÜD	Filled Survey Forms for sampling onsite	16/03-19/03/2015	Total 42 copies
4.	Impact Carbon	Monitoring report of "Clean and Efficient Cooking and Heating Project, China"	06/03/2015	Version 01
5.	Impact Carbon	ER calculation tool, version 01	11/05/2015	
6.	Impact Carbon	PDD of "Clean and Efficient Cooking and Heating Project, China"	01/04/2011	Version 04
7.	DNV	Validation report of "Clean and Efficient Cooking and Heating Project, China" Report No. 2010-9436	12/06/2010	
8.	DNV	1st verification report of "Clean and Efficient Cooking and Heating Project, China" Report No. 2011-9203	10/05/2011	Period: 29/03/2009 to 30/09/2010
9.	TÜV SÜD	2nd verification report of "Clean and Efficient Cooking and Heating Project, China" Report No. 600501031	05/12/2012	Period: 01/10/2010 to 15/05/2012
10.	TÜV SÜD	3rd verification report of "Clean and Efficient Cooking and Heating Project, China" Report No. 10053TE	09/10/2013	Period: 16/05/2012 to 28/02/2013
11.	Impact Carbon	Project Design Change Approval	30/04/2013	

Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date (dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
12.	Impact Carbon	Guizhou Passport	30/04/2012	
13.	Impact Carbon	Hubei/Enshi Passport	30/04/2012	
14.	Yu County Business Administration, Shanxi	Business license of Shanxi Jinqilin Energy Technology Company Ltd. (Jinqilin)	04/01/2007	Ref. 140322200003685
15.	Anshun Business Administration	Business license of Anshun Huifeng Energy Saving Stove Company Ltd. (Huifeng)	23/11/2009	Ref. 522500000003467
16.	Enshi Business Adminstration	Business license of Enshi Zhiqi Biomass Energy Science and Technology Development Company Ltd. (Zhiqi)	27/05/2009	Ref. 422801000018873
17.	CAREI	Map of villages implemented the improved stoves in Shanxi Province	03/2015	GPS coordinates
18.	CAREI	Map of villages implemented the improved stoves in Guizhou Province	03/2015	GPS coordinates
19.	CAREI	Map of villages implemented the improved stoves in Enshi state	03/2015	GPS coordinates
20.	CAREI	Improved stoves technology design and specifications	06/2012	
21.	Shanxi Mechanic Product Quality Supervision and Test Station	Stoves Performance Tests (Model CKQ)	31/01/2008 22/10/2011	Ref. WJ08013101 Ref. ZWJ11100069
22.	Beijing Zhongyan Huanneng & Environment Protection Tech. Test Centre	Stoves Performance Tests (Model ZQ-JG-220)	05/05/2011	Ref. 2010010320U

Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date (dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
23.	Beijing Zhongyan Huanneng & Environment Protection Tech. Test Centre	Stoves Performance Tests (Model HK-HF-70)	05/05/2011	Ref. 2010010320U
24.	Impact Carbon	Training seminar and Qualification of the Monitoring Team (BUCT)	2009	
25.	BUCT	KS_KPT Report; Shanxi 4-year aging KS_KPT Report; Shanxi	05/2012	04/2015 updated (as the 3rd KPT report, valid 2 years)
26.	BUCT	KS_KPT Report; Guizhou 2-year aging KS_KPT Report; Guizhou	08/05/2012	04/2015 updated (as the 2nd KPT report, valid 2 years)
27.	BUCT	KS_KPT Report; Enshi 2-year aging KS_KPT Report; Enshi	05/2012	04/2015 updated(as the 2nd KPT report, valid 2 years)
28.	Impact Carbon	KS report and data analysis; Shanxi	03/06/2013	04/2015 updated
29.	Impact Carbon	KS report and data analysis; Guizhou	23/07/2013	04/2015 updated
30.	Impact Carbon	KS report and data analysis; Enshi	23/07/2013	04/2015 updated
31.	BUCT	KS Scanned Sample	04/2015	
32.	BUCT	QKS Scanned Sample	04/2015	
33.	BUCT	Usage survey and Usage report, Jinqilin, Shanxi Stove Ages 0-1, 1-2, 2-3, 3-4, 4-5 years	2007	04/2015 updated

Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date (dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
34.	BUCT	Usage survey and Usage report, Huifeng, Guizhou Stove Ages 0-1, 1-2, 2-3, 3-4, 4-5 years	2010	04/2015 updated
35.	BUCT	Usage survey and Usage report, Zhiqi, Enshi Stove Ages 0-1, 1-2, 2-3, 3-4, 4-5 years	2009	04/2015 updated
36.	Jinqilin	Training records	2014-2015	
37.	Huifeng	Training records	2014-2015	
38.	Zhiqi	Training records	2014-2015	
39.	Jinqilin	Sales records for cook stoves in Shanxi Province	2009-2015	
40.	Local official administrative	Subsidiary report for cook stoves and bank transactions from local government/manufacturers	2013-2015	Crosscheck evidence
41.	Distributors	Receipts for retail records	2013-2015	Crosscheck evidence
42.	Jinqilin stove receivers	Household name lists with original signatures	2010-2015	As many as possible
43.	Huifeng	Sales records for cook stoves in Guizhou Province	2009-2015	
44.	Local official administrative	Bidding contracts for biomass stoves	2013-2015	Crosscheck evidence
45.	Bank statement	Receipts and invoices for payment	2013-2015	Crosscheck evidence
46.	Huifeng stove receivers	Household name lists with original signatures	2009-2015	As many as possible
47.	Zhiqi	Sales records for cook stoves in Enshi Autonomy State	2009-2015	
48.	Badong County Finance Bureau	Approval for purchase proposal of improved cook stoves	2013, 2014, 2015	Crosscheck evidence

Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date (dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
49.	Distributors	Bank transaction statements	2013-2015	Crosscheck evidence
50.	Zhiqi stove receivers	Household name lists with original signatures	2009-2015	As many as possible
51.	Impact Carbon	Monitoring Report by Berkeley Air Monitoring Group in 2009	2009	
52.	Impact Carbon	Guizhou local stakeholder consultation (LSC) report	30/04/2012	
53.	Impact Carbon	Hubei/Enshi LSC Report	30/04/2012	
54.	Impact Carbon	Non-Renewable Biomass (NRB) Study, NRB Calculations, Enshi	27/04/2016	
55.	Impact Carbon	NRB Study, NRB Calculations, Guizhou	27/04/2016	
56.	State council	Forestry Law Amendment, People Republic of China	29/04/1998	
57.	Impact Carbon	Leakage Assessment	04/2015	
58.	Jinqilin	Stove warranty cards	2013-2015	
59.	Huifeng	Stove warranty cards	2013-2015	
60.	Zhiqi	Stove warranty cards	2013-2015	
61.	Impact Carbon	ER calculation; Shanxi	04/04/2016	
62.	Impact Carbon	ER calculation; Guizhou	04/04/2016	
63.	Impact Carbon	ER calculation; Enshi	04/04/2016	
64.	CAREI & Zhiqi	VER Purchase Agreement	18/11/2008	Start date of improved stove involvement
65.	CAREI & Huifeng	VER Purchase Agreement	05/01/2009	Start date of improved stove involvement
66.	SHANXI COAL	Coal price history records and trends analysis	Access on	

Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date (dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
		http://www.sxcoal.com/shxcoal/index.html	04/08/2013	
67.	Impact Carbon	Final ER calculation tool, version 04	28/04/2016	
68.	Impact Carbon	Final MR version 07	28/04/2016	

Annex 3
Appointment Certificates

ZERTIFIKAT ◆ CERTIFICATE ◆ 認証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

South Asia

CERTIFICATE OF APPOINTMENT

Mr. Jiang, Zhe 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
	☒	☒	☐	☐	☐

Qualification as						
Status	Validator ☒	Verifier ☒	ATL ☒	Technical Reviewer ☐	Financial Expert ☒	Technical Expert ☒
TA (s)	1.2, 13.1					

Country Expertise						
Region	1	2	3	4	5	Other
	☐	☐	☐	☐	☒	
Further countries						

Technical Area
1.2_Renewables
13.1_Solid waste and wastewater

This appointment is valid until 31.01.2016 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-0009/005.

Date	Signature
01/01/2015	

TÜV SÜD South Asia ● Solitaire, 4th Floor ● ITI Road, Aundh ● Pune – 411007 ● Tel.: +91 20 6684 1200 ● Fax: +91 20 6684 1261

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South Asia

CERTIFICATE OF APPOINTMENT

Mr. DOU, Wenxuan 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
	☒	☐	☐	☐	☐

Qualification as						
Status	Validator ☐	Verifier ☐	ATL ☐	Technical Reviewer ☐	Financial Expert ☐	Technical Expert ☒
TA (s)	1.1, 3.1, 4.10.					

Country Expertise						
Region	1	2	3	4	5	Other
	☐	☐	☐	☐	☒	
Further countries						

Technical Area
1.1_4.10_Thermal energy generation
3.1_Energy demand

This appointment is valid until 31.08.2016 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-0094/002.

Date	Signature
01/01/2015	

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TÜV SÜD 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
	☒	☒	☒	☒	☐

Qualification as						
Status	Validator ☒	Verifier ☒	ATL ☒	Technical Reviewer ☒	Financial Expert ☒	Technical Expert ☒
TA (s)	1.2, 3.1, 6.1, 13.1					

Country Expertise						
Region	1	2	3	4	5	Other
	☒	☐	☐	☐	☐	
Further countries						

Technical Area
1.2_Renewables
3.1_Energy demand
6.1_Construction
13.1_Solid waste and wastewaterl

This appointment is valid until 31.01.2016 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-0031/006.

Date	Signature
01/01/2015	Shivraj.

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