South Asia

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Verification and Certification Report

Verification of the Registered GS Project

"Clean and Efficient Cooking and Heating Project, China"

GS reference number: 949

Monitoring Period 02: 01-10-2010 to 15-05-2012

Report No. 600501031

06 December 2012

TÜV SÜD South Asia Pvt. Ltd.
Environmental Technology
Carbon Management Service
Solitaire, I.T.I. Road, Aundh
Pune- 411007
INDIA

South Asia

Date of first issue of this report	16/07/2012
Revision No. of this report	04
Registered PDD (version/date)	Version 04 – 01/04/2011
GS Registration date	29/03/2011
Revised Monitoring Plan	Project design change was issued preliminary approval by GS on 23/07/2012
Methodology (title; number; version)	Indicative Programme, Baseline, and Methodology for Improved Cook-Stoves and Kitchen Regimes, Version 02
Crediting period	29/03/2009 to 28/03/2018 including 2 years retroactive crediting (renewable)
Published Monitoring Report (version/date)	Version 01 - 15/06/2012
Final Monitoring Report (version/date)	Version 08 - 04/12/2012
Scope	3
Technical Area	3.1
Location of the Project	Shanxi Province, Guizhou Province, Enshi Autonomous State of Hubei Province
Project Participant (contractor)	Impact Carbon (Client) 47 Kearny Street, Suite 600, San Francisco, CA 94108 Myclimate Sternenstrasse 12, Zurich 8002, Switzerland
Project Documentation Link	https://gs2.apx.com/myModule/rpt/myrpt.asp?r=111

VERIFICATION AND CERTIFICATION CONCLUSION

TÜV SÜD South Asia Pvt Ltd has performed the second periodic verification of the aforementioned registered GS project activity “Clean and Efficient Cooking and Heating Project, China”. The Project activity replaces inefficient “traditional” coal-burning stoves with improved biomass stove technologies. it consists of the implementation of improved biomass stoves in Shanxi Province, Guizhou Province and Enshi Autonomous State of Hubei Province. By the end of this monitoring period, totally 25,989 stoves in Shanxi Province, 16,443 stoves in Enshi state and 31,886 stoves in Guizhou Province have been retroactively included since 2009.

The management of Impact Carbon is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions on the basis set out within the project’s Monitoring Plan indicated in the registered PDD and the applied methodology.

A document review, followed by a site visit was conducted to verify the information submitted by the project participant regarding the present verification period. Based on the assessment carried out, the verifier confirms the following:

- the development and maintenance of records and reporting procedures are in accordance with the registered monitoring plan;
- the project has been implemented and operated in accordance with the descriptions given in the registered GS PDD (version 04, 01-04-2011, except project design change mentioned below).
- There are two new clusters involved in the project activity. Therefore, a project design change has been requested to have a 100% compliance with the actual situation. This has been applied and preliminary approved by GS foundation on 23/07/2012 (IRL 72). The

project design change complies with the applied GS methodology ("Methodology for Improved Cookstoves and Kitchen Regimes V02") and the monitoring has been carried out in accordance with the project design change.

- The involved stoves being essential for generating emission reductions run reliably, and monitoring equipment is calibrated appropriately;
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements;
- the monitoring plan in Monitoring Report is as per registered GS PDD

Based on the information we have seen and evaluated, we confirm that the project activity achieved the verified amount of reductions in anthropogenic emissions by sources of greenhouse gases that would not have occurred in the absence of the project activity.

Verified emission reductions in this monitoring period: 448,844 t CO_2e

Baseline: 448, 844 tCO_2e
Project emissions: 0 tCO_2e
Leakage: 0 tCO_2e

Pune, 06/12/2012

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Certification Body "Environment and Energy"
TÜV SÜD South Asia Pvt Ltd

Abbreviations

BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM-EB	CDM Executive Board
CM	Combined Margin
CO_2e	Carbon dioxide equivalent
CR / CL	Clarification Request
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission Reduction
FAR	Forward Action Request
FSR	Feasibility Study Report
GHG	Greenhouse Gas(es)
GS	Gold Standard
GS-TAC	Gold Standard Technical Advisory Committee
GWP	Global Warming Potential
ICS	Improved Cook Stove
IPCC	Intergovernmental Panel on Climate Change
IRL	Information Reference List
KP	Kyoto Protocol
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-Governmental Organisation
OM	Operating Margin
PDD	Project Design Document
PP	Project Participant
SDM	Sustainable Development Matrix
TÜV SÜD	TÜV SÜD South Asia Pvt Ltd
VER	Verified Emission Reductions/Voluntary Emission Reduction
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Clean Development Mechanism Validation And Verification Standard

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1 METHODOLOGY

1.1 Objective

TÜV SÜD has been commissioned by the aforementioined client to perform an independent verification assessment.
The objective of the verification work is to comply with the GS 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 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 requirements,
- ensure that the actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the GS methodology,
- evaluate the data recorded and stored as per the "Gold Standard Methodology for Improved Cook-stoves and Kitchen Regimes – version 02".

1.2 Scope

The verification scope encompasses an independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the Designated Operational Entity. The verification is based on the submitted monitoring report, the validated project design documents including its monitoring plan and validation report, the verification reports for its retroactive period, the GS monitoring methodology, relevant decisions, clarifications and guidance from GS TAC and, if applicable, from the EB and any other information and references relevant to the project activity's resulting emission reductions. These documents are reviewed against the GS requirements and related rules and guidance.
Based on the requirements in the VVS, TÜV SÜD has applied a rule-based approach for the verication of the project. The principles of accuracy, completeness, relevance, reliability and credibility were combined with a conservative approach to establish a traceable and transparent verification opinion.
The verification considers both quantitative and qualitative information on emission reductions.
The verification is not meant to provide any consultancy towards the client. However, stated requests for clarifications, corrective and/or forward actions may provide input for improvement of the monitoring activities.

1.3 Verification Process

The information provided by the project participants is assessed by applying the means of verification specified in the GS general guidance and in the absence of specific means of verification specified at GS the standard auditing techniques are applied.

Once TÜV SÜD receives the Monitoring Report and a confirmation from any PP to upload, the MR is made publicly available through a dedicated interface on the GS website.
A competent assessment team is selected priot to the start of the verificaiton. The team is selected to cover the technical area(s), sectoral scope(s) and relevant host country experience for evaluating the GS 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 registry.

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 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 review (TR).

It is required that the sectoral scope(s) and the technical area(s) (TA) linked to the methodology/ies and project 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
Mr. Maharjan, Bhai Raja	**ATL**	**þ**	**þ (GS)**	**-**	**-**
Mr. Zhe, Jiang (Eric)	V	þ	-	þ	þ

Technical Reviewer (s):

Name	Qualification	Scope	Technical area
Mr. Mitterwallner, Robert	**TR**	**þ**	**þ (GS)**
Ms. Madhuri Nanda[1]	**-**	**þ**	**þ (GS)**
Mr. Yutaka Yoshida[1]	**-**	**þ**	**þ**

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

[1] Ms. Madhuri Nanda and Mr. Yutaka Yoshida had been appointed TR until 21.11.2012. Due to CB function transferring TUV South Asia, they have not been appointed / re-appointed in the context of new appointment criteria at the time of the submission of this VR.

to the frequency of measurements, the quality of the 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 attached as Annex 2 to this report.

1.6 On-site Assessment and follow-up Interviews

During on-site visit (26/06/2012 - 04/07/2012) 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 and the approved methodology, including calibrations, maintenance, etc.,
- review the calculations and assumptions used to obtain the GHG data and ER,
- indentify if the quality control and quality assurance procedures are in place to prevent or correct errors or omissions in the reported parameters.

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.

As required by GS, the audit team is requested to validate the additional baseline surveys conducted for the project design change in two new clusters, i.e. Guizhou Province and Enshi state, meanwhile there are 2-year aging kitchen survey and quarterly kitchen survey conducted in the Shanxi Province, is verified in this monitoring period. The following visits have been performed for all three clusters 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 of each province 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 Shanxi Province:
- Shanxi Province, Yu county, Baijia Village (20 households);
- Shanxi Province, Yu county, Mulai’ao Village (6 households);
- Shanxi Province, Yu county, Xiaohu Village (6 households);
- Shanxi Province, Yu county, Puxian Village (12 households);
- Shanxi Province, Yu county, Xizhang Village (6 households);
- Shanxi Province, Yu county, Xijing Village (4 households);

The selected villages under the cluster Guizhou Province:
- Guizhou Province, Anshun city, Tangyue Village (7 households);
- Guizhou Province, Anshun city, Luoyuan Village (6 households);
- Guizhou Province, Anshun city, Jiujia Village (2 households);

The selected villages under the cluster Enshi state of Hubei Province:
- Enshi autonomous state, Hongtu county, Hongtuxi Village (6 households);

- Enshi autonomous state, Xintang county, Xiaba Village (4 households);
- Enshi autonomous state, Sancha county, Sancha Village (2 households);

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”.

2 REPORTING REQUIREMENTS

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 Preliminary approval of project design change (IRL 72) and final Monitoring Report (Version 07 - 21/11/2012). 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.

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 have been reported in the monitoring report.	þ 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 published MR.
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.	The DOE and GS have assessed post-registration changes in the Project designe change Review Request as attached.	In GS Review Request of the project design change (IRL 72), DOE has requested to assess the impact of the design change. After document review and interview, DOE has confirmed that the post registration changes meet all the eligibilities required by the methodology. As for GS guidance (IRL 73), the project desgin change final review and 2nd verification will be conducted in parallel. The detailed validation has been addressed in the chapter 2.2.
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.	Household surveys in the new areas of Guizhou and Enshi show similar baseline characteristics as the registered PDD. Specifically, coal is the predominant fuel for cooking and heating in the winter months. Annex 05; KS_KPT Report; Enshi, Table 1 shows that 97% (386 out of 400 HH surveys) use coal as the primary cooking and heating fuel. Annex 06; KS_KPT Report; Guizhou, Table 1 shows that 86% (267 out of 311 HH surveys) use coal as the primary cooking and heating fuel in the winter months.	By site visit and interview, as well as document review to the Aging KPT/Quarterly KS in Shanxi Province (IRL 32), the audit team confirms the new households increased in Shanxi Province, which is known "coal as predominant fuel for cooking". During the on-site validation, and document review on baseline KS in Guizhou Province (IRL 33), the audit team confirms the stove households distributed in the region, which is known "coal as predominant fuel for cooking and heating". The established baseline and calculation has been validated. During the on-site validation, and document review on baseline KS in Enshi Autonomy State (IRL 34), the audit team confirms the stove households distributed in the region, which is known "coal as predominant fuel for cooking and heating". The established baseline and calculation has been validated. As for GS guidance (IRL 73), the project desgin change

Remaining Requests from Previous Verifications	Summary of project owner response	Audit team Conclusion and IRL
		final review and 2nd verification will be conducted in parallel. The detailed validation has been addressed in the chapter 2.2.
Forward action request No. 4: Post-registration Changes requiring the creation 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	At this moment, PP and DOE joint responsed for the GS Review Request of the proposed Project Design Change. Mr. Abhishek Goyal of Gold Standard is working on GS949 project.	As for GS guidance (IRL 73), the project desgin change final review and 2nd verification will be conducted in parallel. The detailed validation has been addressed in the chapter 2.2.
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.	The project applies a fixed baseline for the new clusters. The remainder of the crediting period is 4 years (7-years total crediting period). Coal has been the dominant fuel in the heating season for generations in Guizhou and Enshi. Given historical trends, this pattern is not likely to change in the baseline in the next 4 years. Regardless, the project monitors baseline fuel type through quarterly surveys, and adjusts emission reductions according to actual heating months. The crediting period and baseline will be reassessed and renewed in 4 years.	þ During site visit and interviewing, the coal is dominant fuel in the heating seasons. Given historical trends, this pattern is not likely to change in the baseline in the crediting period, the audit team confirms that PPs use fixed baseline for all clusters.

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.

The proposed project design change was under GS Request Review on 23 July 2012.

Comment/Request 6: *Comment/request for DOE Assessment*

According to GS's eligibility rules, project activities that make use of non-renewable biomass are not eligible for GS registration. PP states that the biomass sources used in the project change are 100% renewable. The DOE is requested to check the renewability analysis of the project change. Differentiation between non-renewable and renewable woody biomass in AMS II.G v3 shall be followed as the principle for demonstration of renewable biomass.

The DOE is requested to check the additional baseline surveys conducted for the project expansion in Hubei and Guizhou, the updated baseline emission level, and the updated ER calculation. Please assess if it is appropriate to include the new cookstove design in existing cluster inline with the methodology requirement.

The DOE is requested to provide discussion on eligibility of proposed crediting year for new cook stove designs considering; the cookstove installation date, remaining life of cookstove, crediting period start date for registered project and remaining crediting period after inclusion.

TUV SUD Validation:

1, Regarding to the assessment of renewable biomass, the audit team has confirmed by site visit that the woody biomass is used in the new clusters of the GS project, Guizhou Province and Enshi State, respectively. First of all, the audit team has reviewed the Demonstrably Renewable Biomass (DRB) reports for Guizhou Province and Enshi State (IRL 16, 17). Both reports followed established principle of DRB in the AMS II.G methodology to make assessment. During the site visit (30/06-02/07 in Guizhou, 03/07-04/07 in Enshi), as well as meeting with local forest administrative (01/07 in Guizhou, 04/07 in Enshi), the audit team can confirm that the underlying laws and local regulations (IRL 64), applied parameters and regional statistics of the new clusters in the reports (IRL 65, 66) are plausible and appropriate. On the other hand, on the basis of its specific local and sectoral expertise, as well as validated on-site, the audit team confirm that both DRB reports for Guizhou Province and Enshi State are developed in accordance with the AMS.II.G v3, those fuelwood biomass used in the project activity are considered demonstrably renewable and meet all the CDM renewability requirements.

2, Regarding to the additional baseline surveys conducted for the project expansion in Guizhou Province and Enshi State,
A total of 400 household Baseline Surveys in the newly added cluster (Enshi state) has been conducted in early 2012. Through the document review (IRL 34), as well as the site visit (03/07-04/07) and meeting with the Beijing University of Chemical Technology (BUCT) monitoring team, the audit team confirms that the baseline determination has been conducted transparently

in lines with the GS methodology. The baseline scenario determined for this cluster is the existing practice of using traditional cook stoves for cooking and heating in coal endemic area of Enshi state in heating seasons. This is conservative given that the site visit found that some end users of the combined heating and cooking stoves continue to use the stove outdoors during the non-heating season, the project conservatively excludes coal replacement during non-heating heating months due to biomass stove use.

A total of 311 household Baseline Surveys in the newly added cluster (Guizhou Province) has been conducted in early 2012. Through the document review (IRL 33), as well as the site visit (30/06-02/07) and meeting with the BUCT monitoring team, the audit team confirms that the baseline determination has been conducted transparently in lines with the GS methodology. The baseline scenario determined for this cluster is the existing practice of using traditional cook stoves for cooking and heating in coal endemic area of Guizhou Province in heating seasons. This is conservative given that the site visit found that some end users of the combined heating and cooking stoves continue to use the stove outdoors during the non-heating season, the project conservatively excludes coal replacement during non-heating heating months due to biomass stove use.

Meanwhile, the new-stove KPTs on the newly added clusters (Guizhou, Enshi state) have also been well performed to determine the baseline emissions by the third party, BUCT monitoring team. On the basis of the specific local and statistic expertise, the audit team confirms that the baseline emissions presented in both Kitchen Performance Tests (IRL 33, 34) achieved 90/10 confidence/precision, in accordance with the GS methodology, thus credible. As for the ER calculation, it was worthy mentioning that the latest GS design change request review (IRL 72) that clearly stated PP can count retroactive sales from relevant established start dates, therefore PP confirmed to establish the VERPA signature dates as the earliest possible supporting evidences to get involved the improved stoves, respectively (signature date of new cluster in Enshi state is 18/11/2008, IRL 74; for new cluster in Guizhou Province is 05/01/2009, IRL 75).

In the project design change, it is clear that the new cook stove design has been implemented in new added clusters respectively, not in existing cluster. In line with FARs raised in the validation report, the audit team has further assessed the eligibility of the project activity with new cook stove designs in new clusters (Guizhou and Enshi state). As indicated in the Performance Tests, both new stove type implemented in Guizhou, HK-HF-70 improved stove and Enshi state, ZQ-JG-220 improved stove are originally derived the same patent as the registered stove type (Model CKQ) in Shanxi Province. The Performance Tests (IRL 28, 29, 30) have shown the similar characteristics and thermal efficiency. With meeting with CAREI local expertise and testing methodology criteria, the audit team confirmed that the GS methodology is applicable to the new clusters with introducing the improved cook-stoves.

3, GS949 has been registered since March 29, 2011 with the renewable crediting period, with two years retroactive crediting period, i.e. March 29. 2009 to March 28, 2011 as GS rules. What is so called “crediting period” mentioned below means the 1st 7-years renewable period. Supposed that the preliminary approval project design change would get final released by GS, the crediting period for new cook stove designs in new clusters should be in accordance with the crediting period in the registered GS PDD, e.g. March 29, 2011 to March 28, 2018, with two years retroactive crediting period, i.e. March 29. 2009 to March 28, 2011. However, the first retroactive emission reductions have been claimed in the monitoring period (March 29, 2009 to Sept 30, 2010). The proposed crediting year for new cook stove designs begins on the first date of this Monitoring Period (1st October 2010).

On the other hand, the GS design change request review (IRL 72) that clearly states PP can count retroactive sales from relevant established starting dates. Therefore, the VERPA

signature dates as the earliest possible supporting evidences to get involved the improved stoves, respectively (signature date of new cluster in Enshi state is 18/11/2008, IRL 74; for new cluster in Guizhou Province is 05/01/2009, IRL 75). During the site visit, the audit team has verified the improved stoves installation date with the full sales records dated back to the beginning of 2009 in the new clusters (Guizhou and Enshi state).

As for the remaining life (and therefore remaining crediting period) of the cook stove, it is based on monitoring usage survey results which will be monitored periodically. It is in accordance with the statement in the latest methodology (version 3), "Technologies aged beyond their useful lifetime, as established in the usage survey, are removed from the project database and no longer credited" (p. 23). During the site visit, the audit team has verified the usage survey monitoring data and protocols to ensure those stoves that go out of use are taken into account in the calculations. (IRL 42-45)

As for the crediting period start date for registered project and remaining crediting period after inclusion, it is considered no change. The starting date of GS949 is March 29, 2011, and the remaining crediting period after new clusters inclusion is till March 28, 2018, the same ending time as the originally registered project activity.

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, as indicated in a Memo on 10/02/2012 (IRL 09). The initial project site in Shanxi province, reduces 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. As for GS guidance (IRL 73), the project desgin change final review and 2nd verification will be conducted in parallel. 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 preliminary approval of the project design change (IRL 72), 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:

<table>
<tr><td>Data / Parameter:</td><td>Ny,i,Shanxi</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 Shanxi 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 50)</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 51, 52, 53)
<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>4th Quarter, 2010</td><td>370</td><td>200 stoves were subsidized by local government with official statement
170 stoves were sold by retail with individual receipts.</td></tr>
<tr><td>2011</td><td>9,020</td><td>5443 stoves were subsidized by local government (County/Village) with bank statement
3577 stoves were sold with carbon financing. Each county/village government has issued statement to clearly report the number stoves received.</td></tr>
<tr><td>2012 (until 15 May 2012)</td><td>3,196</td><td>3196 stoves were sold with carbon financing. Each county/village government has issued statement to clearly report the number stoves received.</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

<table>
<tr><td></td><td>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 54)</td></tr>
<tr><td>Means of verification/Comments:</td><td>Local stove manufacture (Huifeng) 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 (Huifeng), via crosschecking with different credible sources (IRL 55, 56, 57)
<table>
<tr><th>Period</th><th>Total Sale Record</th><th>Cross checking</th></tr>
<tr><td>2009</td><td>8,546</td><td rowspan="4">In this monitoring period, the local manufacturer (Huifeng) has won the subsidiary contracts 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. The audit team confirmed that the evidence chain is complete and credible.</td></tr>
<tr><td>2010</td><td>2,727</td></tr>
<tr><td>2011</td><td>15,663</td></tr>
<tr><td>2012 (until 15 May 2012)</td><td>4,950</td></tr>
</table></td></tr>
</table>

Data / Parameter:	*Ny,i,Enshi*
Data unit:	Stoves
Description:	Number of stoves sold in year y of technology i in Enshi state of Hubei 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 58)
Means of verification/Comments:	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.
Cross-check	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 59, 60, 61, 62)

	<table><tr><th>Period</th><th>Total Sale Record</th><th>Cross checking</th></tr><tr><td>2009</td><td>3,383</td><td rowspan="4">In this monitoring period, the local manufacturer (Zhiqi) has won the subsidiary contracts from local governments (County level) by bidding process. Due to incomplete documentation, Zhiqi sought for secondary evidences from the local government. By reviewing the implement plan in the beginning of the year 2010 and 2011, and final inspect report in the end of year 2010 and 2011, The audit team confirmed that the evidence chain is complete and credible.</td></tr><tr><td>2010</td><td>3,338</td></tr><tr><td>2011</td><td>9,722</td></tr><tr><td>2012 (until 15 May 2012)</td><td>0</td></tr></table>

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 t: Jinqilin Stove Ages 1-2; Usage survey & report: Jinqilin Stove Ages 2-3 and 3-4 Years. (IRL 42, 43)
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	Based on the specific local and statistic expertise from BUCT monitoring team as third party, the audit team confirmed the usage survey reports are credible. (IRL 31)

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 Years. (IRL 45)
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	Based on the specific local and statistic expertise from BUCT monitoring team as third party, the audit team confirmed the usage survey reports are credible. (IRL 31)

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 Years. (IRL 44)
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	Based on the specific local and statistic expertise from BUCT monitoring team as third party, the audit team confirmed the usage survey reports are credible. (IRL 31)

Data / Parameter:	$AF_{py,Dcoal,y,i,Shanxi}$
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 Shanxi Province
Source of data used:	Kitchen Performance Test (KPT)/ Aging KPT (IRL 32, 38) The sampling method employed was clustered random sampling of 9 villages, 63 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	Based on the specific local and statistic expertise from BUCT monitoring team as third party, the audit team confirmed the usage survey reports are credible. (IRL 31)

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 33, 39) The sampling method employed was clustered random sampling of 6 villages, 156 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	Based on the specific local and statistic expertise from BUCT monitoring team as third party, the audit team confirmed the usage survey reports are credible. (IRL 31)

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 34, 40) The sampling method employed was clustered random sampling of 12 villages, 168 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	Based on the specific local and statistic expertise from BUCT monitoring team as third party, the audit team confirmed the usage survey reports are credible. (IRL 31)

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 7.6 months (IRL 63). Actual months of usage as measured in the Aging KPT for Age 1+ (IRL 32) are 9.25 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 to arrive at a weighted project fuel savings value to account for this switch in questioning.
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 32, 37) 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:	$T_{usage\ months,Enshi}$
Data unit:	Months
Description:	Average self-reported months of heating in cluster Enshi.
Source of data used:	5.00 months Value derived from household survey results (n=400, st.dev = 0.71)
Means of verification/Comments:	Household surveys evaluated average self-reported months of heating in year y. Estimates for average annual heating months are derived from the results of the household survey. PP considered the project would also apply parameter “actual months of usage”, in stead of “heating months” in the survey to reflect the period of stoved used
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 34) 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 Enshi.
Source of data used:	4.34 months Value derived from household survey results (n=311, st. dev= 0.32)
Means of verification/Comments:	Household surveys evaluated average self-reported months of heating in year y. Estimates for average annual heating months are derived from the results of the household survey. PP considered the project would also apply parameter "actual months of usage", in stead of "heating months" in the survey to reflect the period of stoved used
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 33) 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 20)
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.
Cross-check	-

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 5 quarters. 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, site visit 54 households in person, and interviewing with Ms. Han Wenping as local stove manufacturer.

		In Guizhou Province, Due to the new cluster (Guizhou Province) added in the project design change of GS949, Kitchen Survey conducted by CAREI and BUCT monitoring team further assessed air quality impacts of the improved stoves in March, 2012, totally 78 households was surveyed. The audit team confirmed the statement above by stove performance demonstration, site visit 15 households in person, and interviewing with Mr. Zhan Kun and Ms. Li Hui as local stove manufacturer. In Enshi state, Due to the new cluster added (Enshi Autonomy State) in the project design change of GS949, Kitchen Survey conducted by CAREI and BUCT monitoring team further assessed air quality impacts of the improved stoves in March, 2012, totally 84 households was surveyed. The audit team confirmed the statement above by stove performance demonstration, site visit 12 households in person, and interviewing with Mr. Liao Guangshun as local stove manufacturer.
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, 2-Year Aging Kitchen Performance Test conducted by CAREI and BUCT monitoring team in Shanxi Province in August, 2011, reported that the average household using a Jinqilin stove saves 1.82 tons of coal per year. The average self-reported coal price in Shanxi was $923 RMB/ton, therefore the Jinqilin stoves saves households an average of $1,681 RMB per year. The audit team confirmed the statement above by site visit 54 households in person, interviewing with Mr. Zhang Weihao as monitoring team member, and coal price public available (IRL 76). In Guizhou Province, Kitchen Performance Test conducted by CAREI and BUCT monitoring team in Guizhou Province in March, 2012, reported that the average household using a Huifeng stove saves 1.71 tons of coal per year. The average self-reported coal price in Guizhou was $1662 RMB/ton, therefore the Huifeng stoves saves households an average of $2,842 RMB per year. The audit team confirmed the statement above by site visit 15 households in person, interviewing with Mr. Zhang Weihao as monitoring team member, and coal price public available. In Enshi Autonomy State, Kitchen Performance Test conducted by CAREI and BUCT monitoring team in Enshi Autonomy State in March, 2012, reported that the average household using a Zhiqi stove saves 2.12 tons of coal per year. The average self-reported coal price in Enshi state was $1220 RMB/ton, therefore the Zhiqi stove saves households an average of $2,586 RMB per year. The audit team confirmed the statement above by site visit 12 households in person, interviewing with Mr. Zhang Weihao as monitoring team member, and coal price public available. 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 October 1, 2010 and May 15, 2012, the Project provided Chinese residents with a total of 47,266 stoves (12,586 in Shanxi, 12,922 in Enshi, and 21,758 in Guizhou) within this monitoring period. This is an average of 2,423 efficient stoves per month. Monthly sales records has been

		cross-checked (IRL 50-62).
Subtotal	**+**	
TOTAL	**+**	

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

As for $AF_{py,Apellet,y,i,c}$, $EF_{Pellet\ Machine,i,c}$, $EF_{Pellet\ Machine,i,c}$, $EC_{EL,y,i,c}$, $EC_{pj,y,i,c}$, and $TDL_{y,i,c}$ 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.

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 2.4.

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.

In the second monitoring period, the total ERs achieved was 448,844 tCO_2e, which is significantly more than the estimate in the original GS MR. The following explanations of this difference are presented here:

1, Project design change have included two new clusters (Guizhou Province and Enshi state). And the GS design change request review (IRL 72) that clearly states PP can count retroactive sales from relevant established starting dates. During the site visit, the audit team has verified the improved stoves installation date with the full sales records dated back to the beginning of 2009 in the new clusters (Guizhou and Enshi state). By the end of this monitoring period, totally 25,989 stoves in Shanxi Province, 16,443 stoves in Enshi state and 31,886 stoves in Guizhou Province have been retroactively included since 2009.

2, Usage Rate: As per GS further clarification (IRL 71), PP has improved the sampling approach for usage surveys and has applied random sampling to sales made in the first year of the project (as opposed to following a cohort of stoves). PP has re-evaluated usage rates using improved sampling methods. This resulted in more representative results, which reduced the usage rate for 1-2 year old stoves, but found a higher usage rate for 2-3 year old stoves, as compared to the original MR.

3, Self-Reported Months Usage: As a result of on-going monitoring surveys and project studies, the audit team found that some households use stove during both the non-heating and heating months. The project conservatively applies actual months used to stoves in the newest issuance period, which is a more precise definition, in stead of self-reported heating months/none heating months applied in the previous monitoring period.

In summary, though the difference between the stated data and the published MR is significant, the emission reductions reported have been considered substantial and reasonable based on the facts verified. The audit team confirms that ERs have been considered as the actual result achieved without making any non-conformity with the registered GS PDD with project design change and the applied methodology.

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Annex 1

List of Findings

List of Findings - Compilation and Resolutions

Version: final

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

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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)

Compilation and Resolutions of CARs, CRs and FARs

Corrective Action Requests by verification team		
	Comments and Results	Conclusion and IRL
Issue	In the project design change, Enshi Autonomy State of Hubei Province was surveyed and defined as coal endemic area, in which the Zhiqi improved stoves is on sale. Therfore, Enshi state is more appropriate and precise than Hubei Province, as the geographic boundary of a new cluster in the project activity.	þ Finding Closed IRL 15, 26, 71
Requirement	Methodology for Improved Cook-stoves and Kitchen Regimes V.02 Section II.1	
Corrective Action Request	**Corrective Action Request No. 1** Since Enshi Autonomy State of Hubei Province was defined as coal endemic area as the project boundary, PP shall revise the boundary descriptions throughout the MR to avoid further concepts confusion.	
Response	PP has corrected all project boundary descriptions to reference Enshi state, rather than Hubei	

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Corrective Action Requests by verification team		
	in the MR. The corrected MR is attached.	
Assessment Means of verification	It was confirmed that "Enshi Autonomous State" has replaced "Hubei Province" in the relevant project document to reflect the precise cluster boundary, which is defined as coal endemic area.	
Changes in the monitoring report or supporting annexes	The relevant descriptions have been revised to reflect the changes in the GS Passport and revised MR.	

Corrective Action Requests by verification team		
	Comments and Results	Conclusion and IRL
Issue	GS Meth V1 and V2 allow PP to survey usage from a representative cohort of households from 1st year of sales. That is, each year PP conducted usage surveys on the same 100HH at periodical verification to determine the usage rate. It is not fully in line with the GS Methodology "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."	þ Finding Closed IRL 42, 43, 44, 45 and 71
Requirement	Methodology for Improved Cook-stoves and Kitchen Regimes V.02 Section III.1	
Corrective Action Request	**Corrective Action Request No. 2** As required by GS Methodology, "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." PP shall make sure the usage survey is performed in accordance with the GS requirements. The same situation may apply with the new clusters involved.	
Response	After seeking clarification from GS, PP has determined that GS prefers to randomly select samples from the first year of sales. PP has therefore conducted another usage survey to correct this data for Shanxi Age 1-2 stoves and Age 2-3 stoves. It should be noted that it is not necessary to do this for previous years in Shanxi, nor is it necessary to do for new clusters, as usage monitoring for those vintages were already done in this format, ie. to randomly sample	

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Corrective Action Requests by verification team		
	from the first year of sales. The updated results of this usage survey have been included in the MR and also attached as **Annex 07; Usage Survey, Shanxi.**	
Assessment Means of verification	GS has clarified in the communications dated on 26/07/2012 that the representative sample households for usage survey shall be selected randomly from the 1st year sales. Following the latest guidance, and Meth, IC team conducted another usage survey to correct this data for Shanxi Age 1-2 stoves and Age 2-3 stoves. With the qualified BUCT team, the audit team confirmed that the usage survey for all three clusters, Shanxi, Guizhou and Enshi is in accordance with Meth, therefore credible and acceptable.	
Changes in the monitoring report or supporting annexes	The descriptions have been clearly addressed in the revised MR. Usage survey report for Shanxi has been updated.	

Corrective Action Requests by verification team		
	Comments and Results	Conclusion and IRL
Issue	Enshi as a new cluster in the project design change, the sales records category and office document system is not in line with the requirement of the QA/AC in the registered GS PDD.	þ Finding Closed IRL 58, 59, 60, 61 and 62
Requirement	Methodology for Improved Cook-stoves and Kitchen Regimes V.02 Section III.2	
Corrective Action Request	**Corrective Action Request No. 3** During the site visit in Enshi Zhiqi Biomass Energy Science and Technology Development Company Ltd., the audit team found that there were several subsidiary resources supporting the local stove manufacturer, PP is request to improve the following, 1, Separate the sale records with independent subsidiary resources in different folders for archiving; 2, Establish a complete and credible evidence chains to keep track for the numbers of the stoves sold in the crediting period; 3, Improve the office documentation system, e.g. exclusive staff responsible for that.	

<table>
<tr><td colspan="3">Corrective Action Requests by verification team</td></tr>
<tr><td>Response</td><td>PP has categorized the sales record by different subsidiary resources; the sales record indicates what subsidiary resource was provided to the stove, for example, whether a stove received government support.
PP will also establish streamlined evidence chain for tracking stoves sold and will improve office documentation system for future site visit verifications.</td><td rowspan="3"></td></tr>
<tr><td>Assessment
Means of verification</td><td>During document review and crosscheck once again, the audit team confirmed the number of stoves sold by the local manufacturer (Zhiqi), via crosschecking with different credible sources,
<table>
<tr><th>Project site</th><th>Period</th><th>Total Sale Record</th><th>Cross checking</th></tr>
<tr><td rowspan="4">Enshi state of Hubei Province</td><td>2009</td><td>3,383</td><td rowspan="4">In this monitoring period, the local manufacturer (Zhiqi) has won the subsidiary contracts from local governments (County level) by bidding process. Due to incomplete documentation, Zhiqi sought for secondary evidences from the local government. By reviewing the implement plan in the beginning of the year 2010 and 2011, and final inspect report in the end of year 2010 and 2011.
As for the retailed sale records, The received confirmation and signatures were provided as crosscheck evidences.</td></tr>
<tr><td>2010</td><td>3,338</td></tr>
<tr><td>2011</td><td>9,722</td></tr>
<tr><td>2012 (until 15 May 2012)</td><td>0</td></tr>
</table>
The audit team believed that PP has established streamlined evidence chain for tracking stoves sold and improved office documentation system, and confirmed that the evidence chain is complete and credible.</td></tr>
<tr><td>Changes in the monitoring report or supporting annexes</td><td>The number of the stoves involved in Enshi cluster has been transparently documented, while MR and ER spreadsheet have been updated to reflect the changes, respectively,</td></tr>
</table>

South Asia

Corrective Action Requests by verification team		
	Comments and Results	Conclusion and IRL
Issue	During the site visit and interviewing at Yu County in Shanxi Province, it was found that the stove users used the improved stove not only in non-heating months, also in part of heating season, even the whole season to save coal consumption. Thus, as "self-reported non-heating months" do not always correlate with "self-reported actual months of usage", which resulted in underestimation for emission reductions.	þ Finding Closed IRL 03, 32, 63 IRL 70, 77
Requirement	Methodology for Improved Cook-stoves and Kitchen Regimes V.02 Section III	
Corrective Action Request	**Corrective Action Request No. 4** In the first Kitchen Performance Tests (KPT) in 2009 for cluster Shanxi Province, the kitchen survey concerned the feedback from end-users about the "non-heating months"; While the 2-year Aging KPT in 2011, the question has been improved more accuracy as "actual period Jin-qilin stove used in a year". Due to the valid period of biennially KPTs, PP shall describe how the calculation procedures implemented transparently to apply these two specific parameters with stoves in different ages, appropriately and conservatively. The same situation might be applied in new clusters (Guizhou Province and Enshi State) as well.	
Response	In Shanxi, kitchen surveys show that households use the stove for more months per year than just the non-heating months; actually, it is common for stove users to continue usage of the improved stove through part or all of the heating season. Therefore, as "self-reported non-heating months" do not always correlate with "self-reported actual months of usage", PP now uses self-reported actual months of usage. As this data is only available during the 2nd biennial aging KPT for Shanxi, PP conservatively uses a weighted average to account for using self-reported non-heating months (7.75 months) for stoves Age 1+, and using self-reported months of actual use (9.25 months) in for stoves Age 0-1. These calculations are available and can be transparently traced in Annex 01; Shanxi KPT & KS data Analysis_v2; the table is also pasted below:	

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Corrective Action Requests by verification team		

Fuel Savings	
Fuel Consumption	tonnes coal/household-yr
Baseline	2.83
Project, Age 0-1	1.04
Savings, Age 0-1	1.79
# Sales, Age 0-1	9,740
% Sales, Age 0-1	37%
Project, Age 1+	0.65
Savings, Age 1+	**2.18**
# Sales, Age 1+	**16,249**
% Sales, Age 1+	**63%**
Weighted Project Savings, All	**2.03**

Moreover, as new clusters have been added for efficient heating stoves, the description for parameter Afpy,Dcoal, y, i, c is no longer appropriate as was listed in the original PDD; limiting the parameter to only non-heating months is no longer appropriate. This has been updated as part of the design change: whereas parameter Afpy,Dcoal, y, i, c was listed as “the mass (kg/day) of fossil fuel coal consumed daily during the non-heating season in the project activity by traditional coal stoves in year y specific to HH’s with stove technology i and cluster c” -- clause ‘non-heating season’ has been updated to ‘usage season.’”

Data on self-reported months of usage is available for Shanxi, whereas it is not yet available in Guizhou and Enshi; PP will include this question in future monitoring surveys for new clusters also.

This has had an impact on the number of ERs, as the ERs per stove-year have increased to 5.32 tCO2e for Shanxi. Therefore, total ERs have increased from what was originally reported in the MR.

Assessment	The audit team found by field survey (IRL 03) that it is common for stove users to continue us-	

Corrective Action Requests by verification team		
Means of verification	age of the improved stove through part or all of the heating season in Shanxi Province. In order to more precisely reflect the usage period, PP applied self-reported “actual months of usage” in the 2nd biennial aging KPT for Shanxi (IRL 32), in stead of original survey “non-heating months” in previous KPT report (IRL 63). Due to the validity of the monitoring data in the survey report, only weighted average value as appropriate usage period was applied in the calculation of the coal consumption per day. 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 70)	
Changes in the monitoring report or supporting annexes	ER spreadsheet has been revised to reflect the changes, while the emission reductions are reported conservatively in the revised MR.	

Corrective Action Requests by verification team		
	Comments and Results	Conclusion and IRL
Issue	Conservativeness of the reported data	þ Finding Closed IRL 70, 71
Requirement	GS Principle, Accuracy and conservativeness	
Corrective Action Request	**Corrective Action Request No. 5** According to the conservative principle, PP shall apply appropriately rounding functions, e.g. ROUNDDOWN for both stove usage and emission reductions, into the ER summary calculation spreadsheet.	
Response	Total Emission Reductions have been rounded down to the nearest whole number for conservativeness. This is updated in the Summary ER calculator as well as the Monitoring Report. Usage survey figures are already whole numbers without decimal points and therefore do not need to be rounded.	
Assessment	The audit team has reviewed ER spreadsheet, and confirmed the “ROUNDDOWN” function has	

Corrective Action Requests by verification team		
Means of verification	been applied into the calculation for emission reductions in a conservative manner.	
Changes in the monitoring report or supporting annexes	The cells in the ER excel sheet have been revised accordingly, while the emission reductions are reported conservatively in the revised MR.	

Corrective Action Requests by verification team		
	Comments and Results	Conclusion and IRL
Issue	Incomplete information, in particular, the monitoring team qualification, the calibration information, was presented in Kitchen Performance Test report.	þ Finding Closed IRL 31 and IRL 41
Requirement	Methodology for Improved Cook-stoves and Kitchen Regimes V.02 Section III	
Corrective Action Request	**Corrective Action Request No. 6** According to the GS Methodology “Improved Cook-Stoves and Kitchen Regimes, V02”, regarding to the 2-year aging KPT report for cluster Shanxi Province, as well as KPT reports for new clusters Guizhou Province and Enshi state, PP shall present, 1, A chapter for monitoring team introductions, in particular, statistics expert, or the team members with equivalent qualifications for site survey. 2, the complete calibration information for eight (two for backup) portable scales for kitchen test on site.	
Response	PP has updated the KS/KPT reports to include a section on BUCT team introductions and qualifications. This may be found in **Annex 04, Annex 05, and Annex 06**. Complete calibration information for KT scales are included in the Project Annexes as **Annex 36a and Annex 36b**.	
Assessment Means of verification	1, the audit team has reviewed and confirmed that the training seminar and on-job training hold by Impact Carbon make the BUCT monitoring team qualified for the site survey. 2, the calibration reports for 6 portable scales (other two scales for backup) were issued from the third party, National Institute of Metrology, including the calibration validity and accuracy (IRL 41). It can be confirmed calibration activities have been well conducted in compliance with	

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Corrective Action Requests by verification team		
	the registered GS PDD.	
Changes in the monitoring report or supporting annexes	KPTs for all three clusters have been updated to reflect the changes, respectively.	

Clarification Requests by verification team		
	Comments and Results	Conclusion and IRL
Issue	Leakage assessment	þ Finding Closed IRL 20
Requirement	Methodology for Improved Cook-stoves and Kitchen Regimes V.02 Section II.6	
Clarification Request	**Clarification Request No. 1** The emission reduction calculations will apply the reported value “actual period Jinqilin stove” in stead of “non-heating months”, PP shall further justify the potential leakage risks in section D according to the GS VER methodology “Improved Cookstove Kitchen Regime”. The same situation may apply in the approved new clusters.	
Response	Leakage as listed in Section D refers to households retaining some use of inefficient stoves, such as for heating. PP has confirmed through monitoring that households use the Jinqilin stove for 9.25 months per year, instead of the 7.75 months as was previously thought of in the baseline. The Project continues to factor in leakage, considering that Households may use their inefficient stove or discontinue use of the improved stove for some portion of the year. These results are based on monitoring.	
Assessment Means of verification	In accordance with GS methodology “Improved Cookstove Kitchen Regime-V.02, the project assessed each of the listed forms of leakage. Among it, the project finds leakage in section D “The project population compensates for loss of the space heating effect of inefficient cookstoves by adopting some other form of heating or by retaining some use of inefficient stoves,” thus ER calculations conservatively apply the reported value in the PDD of actual stove use as more precise. No leakage is found for fuel production in the project activity since pellets were not used. Furthermore, it is negligible for the leakage of stove local transport in the project ac-	

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Clarification Requests by verification team		
	tivity. Based on the local and technical expertise from Impact Carbon, the audit team confirmed the leakage assessment reports are convincible.	
Changes in the monitoring report or supporting annexes	MR has been revised to reflect the changes, while the emission reductions are not changed since the leakage emissions were considered as negligible.	

Clarification Requests by verification team		
	Comments and Results	Conclusion and IRL
Issue	Emission reductions comparison	þ Finding Closed IRL 71, 72 IRL 38, 39, 40
Requirement	Methodology for Improved Cook-stoves and Kitchen Regimes V.02 Section II.7	
Clarification Request	**Clarification Request No. 2** The stove usage rate has been updated according to GS Methodology, as well as much more improved stoves are involved in the new clusters due to the earlier established starting date of the project activity. PP shall compare the reported ER with the emission reductions published MR. In case there is any increase or discrepancy, PP shall appropriately justify with it.	
Response	The stove usage rate has been updated for Shanxi from Age 1-2 and Age 2-3, as was referenced in the response to CAR 2. Prior usage survey data using the old method measured usage rates for Age 1-2 at 89%, and Age 2-3 at 71%. However, after re-doing the usage survey to randomly sample from first year of sales, Age 1-2 is measured at 85%, and Age 2-3 is measured at 85%. This does have an impact on ERs from the Shanxi cluster; whereas ERs were at 148,616 tCO2e with old usage rates, the new usage figures result in total ERs of 149,147 tCO2e from the Shanxi cluster. This is because while the usage rate for Age 1-2 has decreased, the usage rate for Age 2-3 has increased. Response from PP on 25.10.2012	

Clarification Requests by verification team		
	-Emission reductions increased slightly compared to the published MR due to 3 factors: 1. Usage Rate: CAR 2 required PP to re-evaluate usage rates using improved sampling methods. This resulted in more representative results, which reduced the usage rate for 1-2 year old stoves, but found a higher usage rate for 2-3 year old stoves, as compared to the original MR. a. -MR V4 P.9 clarifies "Per Gold Standard and DOE request, PP has improved the sampling approach for usage surveys and has applied random sampling to sales made in the first year of the project (as opposed to following a cohort of stoves)." 2. Self-Reported Months Usage: As a result of on-going monitoring surveys and project studies, PP discovered that some households use stove during both the non-heating and heating months. The project conservatively applies actual months used to stoves in the newest issuance period. a. See PP response in CAR 4, and substantiated in MR V4 Figure 9 and associated annexes for ER Calculations 3. Number of Stoves: The actual number of stoves sold as verified by the DOE on the site visit has slightly increased overall sales figures. a. MR V4 P.10 Figure #8 documents the full sales record used for crediting, and references associated Annexes that substantiate sales and were audited by the DOE	
Assessment Means of verification	<u>Response from DOE on 20.10.2012</u> The justification was not sufficient to the audit team. PP shall further substantiate the potential emission reductions compared to the original amounts in the published MR. <u>Response from DOE on 04.11.2012</u> In summary, though the difference between the stated data and the published MR is significant, the emission reductions reported have been considered substantial and reasonable based on the facts verified. The audit team confirms that ERs have been considered as the actual result achieved without making any non-conformity with the registered GS PDD with project design change and the applied methodology.	

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Clarification Requests by verification team		
Changes in the monitoring report or supporting annexes	The statement has been further substantiated to reflect the change in the report with the new credible, convincible evidences provided.	

Forward Action Requests by audit team		
	Comments and Results	
Issue	**Forward Action Request No. 1** During the site visit and interviewing with local manufacturer in Shanxi Province, the audit team could confirm the improved stoves became popular in the nearby counties and regions. When the periodic KPT and KS is performed by the monitoring team, the random sampling selection shall cover all the regions where improved stoves were sold, to be assured the survey results are representative. The same situation may apply with the new clusters approved.	
Requirement	PP acknowledges DOE request to consider surrounding regions to primary sales area when periodic surveys are conducted.	
Forward Action Request	DOE will assess it in the next monitoring period.	

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Annex 2

Information Reference List

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

Interviewed Persons during onsite audit:

26.06.2012 to 29.06.2012

Name	Function	Company
Dr.Guangqing Liu	Monitoring team leader	Beijing University of Chemical Technology (BUCT)
Mr. Xiaofu Chen	Director	China Association for Rural Energy Industries (CAREI)
Ms. Wenping Han	General manager	Shanxi Jinqilin Energy Technology Company Ltd.
Ms. Wenjian Han	President of Board	Shanxi Jinqilin Energy Technology Company Ltd.
Ms. Xiuling Han	Accountant	Shanxi Jinqilin Energy Technology Company Ltd.
Mr. Zhang Weihao	Monitoring team member	BUCT
Ms. Caitlyn Toombs	Project manger	Impact Carbon
Mr .Jimmy Tran	Project manger	Impact Carbon

29.06.2012 to 01.07.2012

Name	Function	Company
Ms. Li Hui	President of Board	Anshun Huifeng Energy Saving Stove Company Ltd. (AHESS)
Mr. Qi Weixue	Deputy director	Anshun Agriculture Bureau

Mr. Guo Baoping	Agriculture Expert	Anshun Agriculture Bureau
Ms. Chen Jianxia	Officer	Anshun Forestry Bureau
Mr. Yang Zhengang	Officer	Anshun Xixiu District Government
Mr. Wang Guilin	Former Division Director	Guizhou Development and Reform Committee
Mr. Zhan Kun	General manager	AHESS
Mr. Yang Yunjing	Technician	AHESS
Ms.Wang Wei	Accountant	AHESS
Mr. Xiaofu Chen	Director	CAREI
Mr. Zhang Weihao	Monitoring team member	BUCT
Ms. Caitlyn Toombs	Project manger	Impact Carbon
Mr. Jimmy Tran	Project manger	Impact Carbon
Mr. Youming Cao	Village Head	Tangyue Village, Guizhou
Mr. Chengpeng Xiao	Project manager	Leping Village Agriculture Service Center
Mr. Guangquan Zhao	Office director	Energy office, Pingba county
Ms. Longqiong Li	Village Head	Jiujia Village, Guizhou
Ms. Mingxiu Hu	Village Head	Luoyuan Village, Guizhou
Mr. Lanshan Chen	Project manager	Shizi Village Agriculture Service Center

02.07.2012 to 04.07.2012

Name	Function	Company
Mr. Mou Jinsong	Director	Enshi Ecology and Energy Bureau,

		Hubei Province
Mr. Li Shihong	Deputy Head	Enshi Forestry Survey and Plan Institute
Mr. Zhou Hangyu	Office director	Enshi Ecology and Energy Bureau
Mr. Tan Yongshuang	Office director	Enshi Ecology and Energy Bureau
Mr. Liao Guangshun	General manager	Enshi Zhiqi Biomass Energy Science and Technology Development Company Ltd.
Mr. Xiaofu Chen	Director	CAREI
Mr. Zhang Weihao	Monitoring team member	BUCT
Ms. Caitlyn Toombs	Project manger	Impact Carbon
Mr. Jimmy Tran	Project manger	Impact Carbon

Other Interviewed Persons (not during onsite audit):

Name	Function	Institution/Company	Date of Interview
Mr. Xiaofu Chen	Director	CAREI	15/08/2012, 09/11/2012
Mr. Zhang Weihao	Monitoring team member	BUCT	10/10/2012, 09/11/2012

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	26/06/2012-04/07/2012	
3.	TÜV SÜD	Filled Survey Forms for sampling onsite	26/06/2012-04/07/2012	Total 81 copies
4.	Impact Carbon	Monitoring report of "Clean and Efficient Cooking and Heating Project, China"	15/06/2012	Version 01
5.	Impact Carbon	ER calculation tool, version 01	20/06/2012	
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	29/03/2009 to 30/09/2010
9.	Impact Carbon	Design Change Memo	10/02/2012	
10.	Impact Carbon	China GS949 Design Change Report	30/04/2012	
11.	Impact Carbon	Project Design Change Request Review	08/2012	2 FARs raised, Issue 6 for DOE was still open
12.	Impact Carbon	Guizhou local stakeholder consultation (LSC) report	30/04/2012	
13.	Impact Carbon	Hubei/Enshi LSC Report	30/04/2012	

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)
14.	Impact Carbon	Guizhou Passport	30/04/2012	
15.	Impact Carbon	Hubei/Enshi Passport	30/04/2012	
16.	Impact Carbon	Non-Renewable Biomass (NRB) Study, NRB Calculations, Enshi	05/2012	
17.	Impact Carbon	NRB Study, NRB Calculations, Guizhou	05/2012	
18.	Impact Carbon	EIA Waiver Certification – Guizhou	05/2012	
19.	Impact Carbon	EIA Waiver Certification – Enshi	05/2012	
20.	Impact Carbon	Leakage Assessment	10/2012	
21.	Yu County Business Administration, Shanxi	Business license of Shanxi Jinqilin Energy Technology Company Ltd. (Jinqilin)	04/01/2007	Ref. 140322200003685
22.	Anshun Business Administration	Business license of Anshun Huifeng Energy Saving Stove Company Ltd. (Huifeng)	23/11/2009	Ref. 522500000003467
23.	Enshi Business Adminstration	Business license of Enshi Zhiqi Biomass Energy Science and Technology Development Company Ltd. (Zhiqi)	27/05/2009	Ref. 422801000018873
24.	China Association for Rural Energy Industries (CAREI)	Map of villages implemented the improved stoves in Shanxi Province	06/2012	GPS coordinates
25.	CAREI	Map of villages implemented the improved stoves in Guizhou Province	06/2012	GPS coordinates
26.	CAREI	Map of villages implemented the improved stoves in Enshi state	06/2012	GPS coordinates
27.	CAREI	Improved stoves technology design and specifications	06/2012	

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)
28.	Shanxi Mechanic Product Quality Supervision and Test Station	Stoves Performance Tests (Model CKQ)	31/01/2008 22/10/2011	Ref. WJ08013101 Ref. ZWJ11100069
29.	Beijing Zhongyan Huanneng & Environment Protection Tech. Test Centre	Stoves Performance Tests (Model ZQ-JG-220)	05/05/2011	Ref. 2010010320U
30.	Beijing Zhongyan Huanneng & Environment Protection Tech. Test Centre	Stoves Performance Tests (Model HK-HF-70)	05/05/2011	Ref. 2010010320U
31.	Impact Carbon	Training seminar and Qualification of the Monitoring Team (BUCT)	2009	
32.	Beijing University of Chemical Technology (BUCT)	KS_KPT Report; Shanxi_v2	05/2012	
33.	BUCT	KS_KPT Report; Guizhou	08/05/2012	
34.	BUCT	KS_KPT Report; Enshi	05/2012	
35.	BUCT	KS Scanned Sample	05/2012	
36.	BUCT	QKS Scanned Sample	05/2012	

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)
37.	BUCT	KPT Scanned Sample	05/2012	
38.	Impact Carbon	Shanxi KPT & KS Data Analysis_v2	10/2012	
39.	Impact Carbon	Guizhou KPT & KS Data Analysis	05/2012	
40.	Impact Carbon	Enshi KPT & KS Data Analysis	05/2012	
41.	National Institute of Metrology	Calibration records of the scales (28/07/2011 prior to site survey in Shanxi Province; 23/12/2011 prior to site survey in Guizhou Province and Enshi state)	28/07/2011 23/12/2011	Engineer: Mr. Wang Xiang
42.	BUCT	Usage Survey Record Jinqilin Stove Ages 0-1 and 1-2 Years Iss-1 Usage Survey Report Jinqilin Stove Ages 0-1 Years Iss-1 Usage Survey Report Jinqilin Stove Ages 1-2 Years Iss-1	05/2012	
43.	BUCT	Usage Monitoring Report, Jinqilin Stove Ages 2-3 and 3-4 Years	09/2012	
44.	BUCT	Usage survey and Usage report, Enshi	05/2012	
45.	BUCT	Usage survey and Usage report, Guizhou	05/2012	
46.	BUCT	Usage original data source	2010	
47.	Jinqilin	Training records	2010-2012	
48.	Huifeng	Training records	2010-2012	
49.	Zhiqi	Training records	2010-2012	
50.	Jinqilin	Sales records for cook stoves in Shanxi Province	2009-2012	
51.	Local official administrative	Subsidiary report for cook stoves from local government/manufacturers	2010-2012	Crosscheck evidence
52.	Distributors	Receipts for retail records	2010-2012	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)
53.	Jinqilin stove receivers	Household name lists with original signatures	2010-2012	As many as possible
54.	Huifeng	Sales records for cook stoves in Guizhou Province	2009-2012	
55.	Local official administrative	Bidding contracts for biomass stoves	2009-2012	Crosscheck evidence
56.	Bank statement	Receipts and invoices for payment	2009-2012	Crosscheck evidence
57.	Huifeng stove receivers	Household name lists with original signatures	2009-2012	As many as possible
58.	Zhiqi	Sales records for cook stoves in Enshi Autonomy State	2009-2012	
59.	Enshi Energy Bureau	Implementation Plan for Poverty Alleviation	2009-2011	Crosscheck evidence
60.	Enshi Energy Bureau	Commission Report for Implementation Plan	2010-2012	Crosscheck evidence
61.	Distributors	Receipts for retail records	2009-2012	Crosscheck evidence
62.	Zhiqi stove receivers	Household name lists with original signatures	2009-2012	As many as possible
63.	Impact Carbon	Monitoring Report by Berkeley Air Monitoring Group in 2009	2009	
64.	State council	Forestry Law Amendment, People Republic of China	29/04/1998	
65.	Enshi Forestry Survey and Plan Institute	Hubei/Enshi Forestry resources overview	23/03/2012	
66.	Anshun Forestry	Anshun Forestry resources overview	28/03/2012	

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)
	Bureau, Guizhou			
67.	Impact Carbon	ER calculation; Shanxi	11/10/2012	
68.	Impact Carbon	ER calculation; Guizhou	11/10/2012	
69.	Impact Carbon	ER calculation; Enshi	11/10/2012	
70.	Impact Carbon	Final ER calculation tool, version 03	11/10/2012	
71.	Gold Standard	Email communications with GS (Usage survey, Mr. Vikash Talyan)	26/07/2012	
72.	Gold Standard	Email communications with GS (Project Design Change, Review Request)	23/07/2012	
73.	Gold Standard	Email communications with GS (Project Design Change, Leon)	31/08/2012	
74.	CAREI & Zhiqi	VER Purchase Agreement	18/11/2008	
75.	CAREI & Huifeng	VER Purchase Agreement	05/01/2009	
76.	SHANXI COAL	Coal price history records and trends analysis http://www.sxcoal.com/shxcoal/index.html	Access on 04/12/2012	
77.	Impact Carbon	Final MR version 08	04/12/2012	

South Asia

Annex 3

Appointment Certificates

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

South Asia

CERTIFICATE OF APPOINTMENT

Mr. Maharjan, Bhai Raja 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	VER	Other
Date	23.03.12				

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		23.03.12	23.03.12	23.03.12		1.2, 2.1, 3.1

Other qualification						
Country Expertise						
Region	1	2	3	4	5	Other
Date	23.03.12					
Further countries						
Financial Expertise						
Date	23.03.12					

Qualification in technical areas	
Technical Area	**Date**
1.2_Energy generation from renewable energy source	23.03.12
2.1_Electricity distribution	23.03.12
3.1_Energy demand	23.03.12

This appointment is valid until 28.02.2013 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-0027/001.

Date	Signature
21.11.2012: Extension of Validity	

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

South Asia

CERTIFICATE OF APPOINTMENT

Mr. Jiang, Zhe (Eric) 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	VER	Other
Date	31.03.12				

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		31.03.12	31.03.12			1.2, 13.1

Other qualification						
Country Expertise						
Region	1	2	3	4	5	Other
Date	31.03.12				31.03.12	
Further countries						
Financial Expertise						
Date	31.03.12					

Qualification in technical areas	
Technical Area	**Date**
1.2_Energy generation from renewable energy source	31.03.12
13.1_Waste handling and disposal	31.03.12

This appointment is valid until 28.02.2013 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-0021/001.

Date	Signature
21.11.2012: Extension of Validity	

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

South Asia

CERTIFICATE OF APPOINTMENT

Mr. Mitterwallner, Robert 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	VER	Other
Date	23.03.12				

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		23.03.12	23.03.12	23.03.12	23.03.12	1.2, 4.1, 4.3, 13.1

Other qualification						
Country Expertise						
Region	1	2	3	4	5	Other
Date	23.03.12		23.03.12			
Further countries						
Financial Expertise						
Date						

Qualification in technical areas	
Technical Area	**Date**
1.2_Energy generation from renewable energy source	23.03.12
4.1_Cement sector	23.03.12
4.3_Iron and steel sector	23.03.12
13.1_Waste handling and disposal	23.03.12

This appointment is valid until 28.02.2013 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-0030/001.

Date	Signature
21.11.2012: Extension of Validity	

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TÜV SÜD
South Asia

CERTIFICATE OF APPOINTMENT

Mr. Yoshida, Yutaka 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	VER	Other
Date	25.03.12				

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		25.03.12		25.03.12		1.2, 2.1,3.1,4.9, 5.1,11.1, 11.2, 12.1, 13.1

Other qualification						
Country Expertise						
Region	1	2	3	4	5	Other
Date	25.03.12					
Further countries						
Financial Expertise						
Date						

Qualification in technical areas	
Technical Area	**Date**
1.2_Energy generation from renewable energy source	25.03.12
2.1_Electricity distribution	25.03.12
3.1_Energy demand	25.03.12
5.1_4.9_11.1_12.1_Chemical process industries	25.03.12
11.2_GHG capture & destruction	25.03.12
13.1_Waste handling and disposal	25.03.12

This appointment is valid until 28.02.2013 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-0062/001.

Date	Signature
30.11.2012: Extension of Validity	

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