



SUSTAINABILITY VERIFICATION REPORT

1st Sustainability Verification
for the GS - CDM Project Activity

Federal Intertrade Haiyuan Solar Cooker Project

(GS Ref. No.: 710)

in

P.R. China

Report No. 01 996 9105053901-1ST VE
Version No. 01.2, 2013-10-09

Designated Operational Entity (DOE)

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I. Project data:

Project title:	Federal Intertrade Haiyuan Solar Cooker Project	Report No.: 01 996 9105053901-1st VE
GS Ref. No.:	710	Current revision No.: 01.2
Monitoring period:	15-09-2010 — 31-08-2012 (both days included)	Date of current revision: 2013-10-09
Methodology:	AMS-I.C./Version 14	Date of first issue: 2013-08-07
Average emission reductions:	Estimated ¹ : 65,544 tCO ₂ e from 15-09-2010 to 31-08-2012 (both days included)	Verified ² : 63,443tCO ₂ e from 15-09-2010 to 31-08-2012 (both days included) ³
GHG reducing measure/technology:	Household solar cookers convert solar radiation to heat for daily cooking, which replace the coal consumption for similar purpose in absence of project activity	

Party	Project participants	Party considered a project participant	Contract party
P.R. China (Host)	Ningxia Federal Intertrade Co., Ltd.	No	<input checked="" type="checkbox"/>
Netherland	Swiss Re Global Markets Limited	No	<input type="checkbox"/>
Switzerland	Post 2012 Carbon Credit Fund CV	No	<input type="checkbox"/>

II. Verification Team:

Verification Team			Role					
Full name	Affiliation TÜV Rheinland	Appointed for Sectoral Scopes (Technical Areas)	Team leader	Team member	Local Expert	Technical Expert	Trainee TR	Technical Reviewer
Ms. Ginger Jiang	China	1.2	X		X	X		
Mr. Timothy Chan		1.2, 2.2, 13.1		X				
Mr. Walter Tang	China	1.1, 1.2, 2.1, 2.2, 3.1, 4.3, 4.5, 13.1						X

Verification Phases	Verification Status
<input checked="" type="checkbox"/> Desk Review <input checked="" type="checkbox"/> Follow up interviews <input checked="" type="checkbox"/> Corrective Actions / Clarifications Requested <input checked="" type="checkbox"/> Resolution of outstanding issues	<input checked="" type="checkbox"/> Full Approval and Submission for Issuance <input type="checkbox"/> Rejected

III. Verification Report:

Final approval	Released	Distribution
<input checked="" type="checkbox"/>	By: Mr. Henri Phan	<input type="checkbox"/> No distribution without permission from the Client or responsible organizational unit
Date: 2013-10-10		<input checked="" type="checkbox"/> Unrestricted distribution

¹ Refer to the EB approved CDM Verification Report (Report no.: 01 997 91050 53901-1st VE).

<< <http://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1269331222.21/iProcess/TUEV-RHEIN1346655405.6/view> >>

² Refer to the EB approved CDM Verification Report (Report no.: 01 997 91050 53901-1st VE).

<< <http://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1269331222.21/iProcess/TUEV-RHEIN1346655405.6/view> >>

³ It is the verified GS CER after the 2% deduction for CDM Adaptation Fund.

Verification opinion — summary

Ningxia Federal Intertrade Co., Ltd. has commissioned TÜV Rheinland (China) Ltd. (the DOE) to perform a sustainability verification of the GS CDM project “Federal Intertrade Haiyuan Solar Cooker Project” (UNFCCC Project 3520, GS Ref. No: 710) in P.R. China (hereafter called “the project activity”). The verification is based on the currently valid documentation of the UN Framework Convention on Climate Change (UNFCCC) and the Gold Standard Foundation (GSF). The project activity reduces GHG emissions by capturing solar energy, which replaces the coal consumption for the same provision of thermal energy demand for cooking in the absence of project activity.

This verification is to verify whether the sustainability monitoring plan, covering the period from 15/09/2010 to 31/08/2012 (including both days, hereafter called “the indicated sustainability monitoring period”), were implemented in compliance with the registered PDD and GS Passport. Hence to verify the amount of GS CERs for the indicated sustainability monitoring period.

This sustainability verification has been executed with the following steps:

- Desk review of the registered PDD (Version 12, 08/12/2012), the registered GS Passport (Version 8, 10/05/2013), the registered GS Validation Report (Version 1.5, 10/05/2013) and the preliminary sustainability monitoring report (Version 1.0, 11/07/2013), issued CDM Verification Report (Version 01.2, 09/12/2012) and the Monitoring Report (Version 3.1, 09/12/ 2012);
- Uploading of the sustainability monitoring report to GS Foundation;
- On-site visit with stakeholder interviews (24/07/2013 to 25/07/2013);
- Issue of checklist with corrective action requests (CARs) and clarification requests (CLs) and the draft verification report & protocol (Table 1).
- Desk review of final GS sustainability monitoring report (Version 3.0, 29/09/2013);
- Review of proposed corrections and clarifications;
- Issue of the final verification report & protocol.

The project activity is to disseminate 17,000 units of solar cookers in 16 townships of Haiyuan County, Ningxia Hui Autonomous Region, China. Until the end of the indicated sustainability monitoring period from 15/09/2010 to 31/08/2012 (both days included), a total of 17,000 units solar cookers were delivered and installed.

According to the registered PDD & the validation report, the project activity applies the GHG monitoring methodology AMS-I.C/Version 14. And the registered GS Passport has described the sustainability monitoring plan for the project activity. The PP has implemented the GHG monitoring plan accordingly, 64,738tCO₂e CERs has been issued for the 1st periodic CDM monitoring period (i.e. 15/09/2010 – 31/08/2012) by the CDM Executive Board. After deducting 2% of the issued CER for the CDM Adaptation Fund, the verified GS CER is confirmed as 63,443tCO₂e.

The project activity was implemented according to the selected GHG monitoring methodology, the GHG monitoring plan and the sustainability monitoring plan. The

registered PDD (Version 12, 08/12/2012) and monitoring report (Version 3.1, 09/12/2012) are confirmed in compliance with the applied methodology as well as all relevant requirements of the UNFCCC for CDM project activities. The results of sustainability monitoring, as shown in the final sustainability monitoring report (Version 3.0, 29/09/2013), were assessed against the registered GS Passport and relevant GS requirements. 3 CLs are raised in the verification process and all the issues are satisfactorily resolved. A FAR is raised by GS in the course of issuance review stage which has been reported in this report accordingly. The DOE therefore is pleased to issue a positive verification opinion for the sustainability monitoring period of the project activity expressed in the attached Certification Statement.

Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide equivalent
DOE	Designated Operational Entity
DR	Document Review
EB	Executive Board
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GS	Gold Standard
GSF	Gold Standard Foundation
HRES	Haiyuan County Rural Energy Station
I	Interview
kW	Kilo Watt
kWh	Kilo Watt Hours
MoV	Means of Verification
MP	Monitoring Plan
MR	Monitoring Report
MW	Mega Watt
MWh	Mega Watt Hours
NRES	Ningxia Provincial Rural Energy Section
NXFI	Ningxia Federal Intertrade Co., Ltd.
OSV	On Site Visit
PDD	Project Design Document
PP	Project Participant
SMR	Sustainability Monitoring Report
t	Tonne
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation And Verification Standard

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1 INTRODUCTION

1.1 Objective

Ningxia Federal Intertrade Co., Ltd. has commissioned the DOE TÜV Rheinland (China) Ltd. to perform a sustainability verification of the Gold Standard CDM Project Activity “Federal Intertrade Haiyuan Solar Cooker Project” in P.R. China. The verification team was assigned by the DOE to conduct the verification assessment on the sustainability monitoring in accordance with the registered PDD, Passport and relevant GS requirements/ guidelines.

The purpose of the verification is to have an independent third party assess the sustainability monitoring implementation for the indicated sustainability monitoring period. In particular, the project's GS monitoring report, and the project's compliance with relevant Gold Standard requirements and host Party criteria are validated in order to confirm that the project is implemented according to the sustainability monitoring plan. This report summarises the findings of the verification of the project activity, performed on the basis of Gold Standard criteria for the verification of GS CER, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.2 Scope

The verification comprises a review of the sustainability monitoring report over the indicated sustainability monitoring period from 15/09/2010 to 31/08/2012 (including both days) based on the registered PDD and the registered GS Passport, approved CDM monitoring report and verification report, with regard to the sustainability monitoring plan and the monitored indicators, approved GHG emission reduction calculation spreadsheet, GHG monitoring methodology and all related evidences provided by project participants. These documents have been reviewed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures and rules and guidance of Gold Standard.

On-site visit and stakeholder interviews were also performed on 24/07/2013 - 25/07/2013 as part of the verification process.

The verification team considers both quantitative and qualitative information on GHG emission reductions and the monitored sustainability indicators. The verification is not meant to provide any consulting towards the client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

2 METHODOLOGY

The verification consists of the following four phases:

- I Making the preliminary monitoring report/Version 1.0 publicly available in the Gold Standard Foundation;
- II Desk review of the monitoring plan, monitoring reports, Passport, project design document and other relevant documents;
- III On-site visit (including follow-up interviews with project stakeholders, when deemed necessary);
- IV Resolution of outstanding issues and the issuance of the final Verification report and Certification statement.

The following sections outline each step in more detail.

2.1 Review of the Project Documentation

The following table outlines the documentation reviewed during the verification:

/1/	/1.1/	GS Requirement and Toolkit, Version 2.1, 01/07/2009
	/1.2/	GS Guidance Note, Annex I – Guidance on Sustainability Assessment
	/1.3/	GS Guidance Note, Annex K – Outline for Validation and Verification Reports
/2/	/2.1/	UNFCCC, CDM Validation and Verification Manual (VVS), Version 3.0, CDM-EB65-A05-STAN
	/2.2/	UNFCCC, Clean Development Mechanism Project Standard, Version 03.0, CDM-EB70-A02
	/2.3/	UNFCCC, “Tool for the demonstration and assessment of additionality” Version 07.0, CDM-EB70-A08
	/2.4/	UNFCCC, “Standard For Sampling And Surveys For CDM Project Activities And Programme Of Activities” Version 3.0, EB69 Annex 4
	/2.5/	UNFCCC, “Guidelines on the applicability of materiality in verification”, Version 01.0, EB69 Annex 6
/3/	UNFCCC, approved methodology “Thermal energy production with or without electricity”, AMS-I.C / Version 14, EB46, Annex 21	
/4/	Registered PDD, Version 12, 08/12/2012	
/5/	Registered Passport, Version 8, 10/05/2013	
/6/	Registered Sustainability Validation Report, Version 01.5, 10/05/2013	
/7/	Registered Local Stakeholder Consultation Report, 25/08/2009	
/8/	Registered CDM Validation Report, Version 01.2, 11/03/2010	
/9/	Issued CDM Monitoring Report (1 st periodic verification), Version 3.1, 09/12/2012	
/10/	Issued CDM Verification Report (1 st periodic verification), Version 01.2, 09/12/2012	
/11/	Issued GHG Emission Reduction Calculations Spreadsheet (1 st periodic verification)	
/12/	/12.1/	Preliminary Sustainability Monitoring Report, Version 1.0, 11/07/2013
	/12.2/	Final Sustainability Monitoring Report, Version 3.0, 29/09/2013
/13/	GS710 Questionnaires to User – Analysis and Conclusion	
/14/	/14.1/	30 sets questionnaires filled by the users
	/14.2/	Manufacturer interview records
/15/	Statement issued by Haiyuan County Rural Energy Station, Hainongnengfa[2013] No.12, 29/07/2013.	

/16/	Email confirmation with GS Technical Expert, 08/08/2013
/17/	GS 3 rd round registration review (final), 21/05/2013
/18/	GS 1 st round issuance review, 18/09/2013

2.2 Follow-up Interviews with Project Stakeholders

TÜV Rheinland verification team carried out an on-site visit dated (04/03/2013-07/03/2013) and performed interviews with the project representatives and stakeholders.

Prior to the interview salient points to be discussed were planned. Date of interview, interviewee and points discussed are given in the following table.

	Date	Name	Organization	Topic
/i/	24/07/2013 - 25/07/2013	Mr. Wei Jiang (as management representative)	Ningxia Federal Intertrade Co., Ltd. (i.e. PP in host country)	<ul style="list-style-type: none"> ➤ Project design and implementation ➤ Project related legal issues ➤ Equipment Installation and starting of operation ➤ Crediting Period for this verification ➤ Monitoring plan and Procedures ➤ QA and QC ➤ Training history and records ➤ Data collection and record keeping ➤ Operation and Maintenance records ➤ Missing Data handling ➤ Management system
/ii/		Mr. Bin Zhang		
/iii/		Ms. Yan Ma		
/ii/	24/07/2013	Mr. Hua Li	Xiji County Dongfanghong Solar Energy Ltd.	<ul style="list-style-type: none"> ➤ Solar cooker supply to the project activity ➤ Employment status ➤ Influence to the company after cooperation with NXFI ➤ Benefits to their employee
/iii/		Mr. Yunchi Zhang	Huining County Yungming Solar Cooker Ltd.	
/iv/	04/03/2013 - 07/03/2013	Mr. Wanjun Li	Haiyuan County Rural Energy Station (operation contractor, who is also the governmental entity in charge of rural energy in Haiyuan County)	<ul style="list-style-type: none"> ➤ Monitoring plan and procedures ➤ QA/QC ➤ Training history ➤ Missing data handling ➤ Data collection and records keeping ➤ Operation and maintenance records ➤ Operation situation
/v/		Mr. Jisheng Yang		
/vi/		29 users who were interviewed	Shidian (3), Shutai (3), Zhengqi (2), Caowa (3), Guanzhuang (1), Xian (3), Haicheng	

			(3), Guanqiao (2), Liwang (3), Sanhe (2), Qiyang (3), Jiatang (1) Township solar cooker users <i>(The number in the bracket is the number of households visited onsite)</i>	
/vii/		Ms. Jiajia Guo	Clean Air Trade Inc. (i.e. CDM Consultant)	<ul style="list-style-type: none"> ➤ Crediting Period for this verification ➤ Monitoring plan and Procedures ➤ QA and QC ➤ Training history and records ➤ Missing data handling ➤ Emission Reductions Calculation ➤ Monitoring report

Verification Team along with onsite observation, objective evidence collections, data generation and recording analysis also considered the views obtained in these interviews while arriving at Verification Opinion.

2.3 Resolution of outstanding issues

The objective of this phase of the verification is to resolve any outstanding issues which have to be clarified prior to final DOE's conclusions on the project implementation, monitoring practices and achieved emission reductions. In order to ensure transparency a verification protocol is completed for the project activity. The protocol shows in transparent manner criteria (requirements), means of verification and resulting statements on verification actual project activity against identified criteria.

The verification protocol serves the following purposes:

- It organises in a table form, details and clarifies the requirements, which CDM and/or GS project is expected to meet;
- It ensures a transparent verification process where the DOE will document how a particular requirement has been verified and the result of the verification.

The verification protocol consists of two tables. Table 1 reflects the verification requirements and reference to the materials used to verify the project activity against those requirements, as well as means of verification, reference to Table 2 and preliminary and final opinion of the DOE on every particular requirement. The completed verification protocol for this project is enclosed in Appendix A to this report.

Findings during the verification can be interpreted as a non-compliance with CDM and/or GS criteria or a risk to the compliance. Corrective action requests (CARs) are raised, in case:

- (a) Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- (b) Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
- (c) Issues identified in a FAR during validation/verification to be verified during verification have not been resolved by the project participants.

Requests for clarification (CLs) are raised, if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

FARs are raised if the monitoring and reporting require attention and/or adjustment for the next verification period.

2.4 Internal quality control

The final verification report will pass a technical review before being submitted to the project participants. The technical review will be performed by a technical reviewer qualified in accordance with TÜV Rheinland's qualification scheme for CDM validation and verification.

2.5 Verification Team

Before the assessment begins, members of the verification team are ensured to cover the technical area(s), sectoral scope(s) and relevant host country experience including local language ability for evaluating the Sustainability verification activity. The qualification of the team is as per the criteria defined by the EB guidelines for qualification.

Verification Team			Type of Involvement						
Full name	Affiliation TÜV Rheinland	Appointed for Sectoral Scopes (Technical Areas)	Supervising the work	Desk review	Site Visit + Interview	Report and protocol Writing	Technical Expert Input	Reporting Support	Technical Reviewer
Mr. Ginger Jiang	China	1.2	X	X	X		X	X	
Mr. Timothy Chan		1.2, 2.2, 13.1		X	X	X			
Mr. Walter Tang		1.1, 1.2, 2.1, 2.2, 3.1, 4.3, 4.5, 13.1							X

3 VERIFICATION FINDINGS

The findings of the verification of the sustainability monitoring of the project activity for the issued CERs (i.e. from the 1st CDM periodic verification) are described in the following sections. There is no FAR raised in the registered GS validation report as well as CDM validation report, but a FAR was raised in the GS registration review stage /17/:

Forward Action Request 1: Since the project activity requested post CDM registration change to include 6 more townships where solar cookers are distributed, the DOE shall interview the local stakeholders from 6 more townships about SD indicator and Do No Harm during the first GS verification onsite and include a summary on the interview in verification report.

Relevant assessments regarding FAR1 are provided in Section 3.5 below. It is confirmed that the FAR1 is addressed. But in the course of GS issuance review stage /18/, FAR2 is raised which is reported in Table 3 of Appendix A of this verification report accordingly. The verification criteria (requirements), the means of verification and the results of verification are documented in detail in the verification protocol in Appendix A.

3.1 Project implementation in accordance with the registered PDD

3.1.1 The implementation of the project activity

Through document review (e.g. the registered PDD /4/, approved CDM monitoring report /9/, and the approved verification report /10/), on-site observation and interviews with the management representative /i/, the verification team can summarize the implementation of the project as below:

Project Participants:	Ningxia Federal Intertrade Co., Ltd. Swiss Re Global Markets Limited Post 2012 Carbon Credit Fund CV
Project Parties:	People's Republic of China (Host) Netherlands (Annex I party) Switzerland (Annex I party)
Title of project activity:	Federal Intertrade Haiyuan Solar Cooker Project
UNFCCC registration No:	UNFCCC Project 3520
GS registration No:	GS Ref. No. 710
Baseline and monitoring methodology:	AMS-I.C/ Version 14
Project Type:	Renewable energy
Project Scale:	Small scale
Location of the project activity:	16 townships (Shidian, Lijun, Jiucui, Shutai, Zhengqi, Jiatang, Caowa, Hongyang, Guanzhuang, Xian, Haicheng, Guanqiao, Liwang, Gancheng, Sanhe, Qiyang) in Haiyuan County, Ningxia Hui Autonomous Region, P.R. China

Referenced corresponding CDM crediting period of the project activity:	15/09/2010 to 14/09/2020 (both days included)
The indicated sustainability monitoring period:	15/09/2010 to 31/08/2012 (both days included)
Approved CER issuance for the 1st periodic CDM monitoring period:	64,738 tCO ₂ e (15/09/2010 – 31/08/2012, both days included) ⁴

By reviewing the approved monitoring report /9/ and verification report /10/ for the 1st CDM periodic verification period (15/09/2010 – 31/08/2012, both days included), it is confirmed that 64,738tCO₂e CER were issued by the EB for the project activity⁵. This verification will directly refer to the CERs and the project implementation which were verified by the CDM verification report /10/. Furthermore, as part of the site visit the verification team was able to confirm that the project implementation is in accordance with the project description contained in registered PDD /4/ and the sustainability monitoring plan in the registered GS Passport /5/.

The project activity is to disseminate 17,000 units of solar cooker in 16 townships of Haiyuan County. As per Section 3.1.1 of the approved CDM verification report, it is concluded that *“the implementation of project activity including equipment installation (i.e. 17,000 solar cookers) is consistent with the registered PDD and no inconsistency has been found from the original plan.”*⁶

*“The project owner, NXFI, distributed the solar cookers to 17,000 participant households by the manufacturers with the coordination of local government entity, Haiyuan County Rural Energy Station (HRES) starting from 02/11/2010, which were after the registration as a CDM project on 15/09/2010.”*⁷ Therefore, the actual operation and GHG monitoring was started from 02/11/2010. Furthermore, it is confirmed by the verification report that *“all the solar cookers of the project activity are located in Haiyuan County and the total number of solar cookers is 17,000, as confirmed from the Participation agreement between the solar cooker user and PP and equipment receiving records and monitoring records, which is consistent with the registered PDD.”*⁸. Refer to Section 3.1.1 of the approved verification report for details.

Through management interviews and document review, the verification team confirms that the implementation of project activity including equipment installation is consistent with the registered PDD.

3.1.2 The actual operation of the project activity

For the assessment of the actual operation of the project activity regarding to the GHG monitoring, the verification opinion refers to result verified by the approved verification

⁴ <http://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1269331222.21/view>

⁵ UNFCCC, <http://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1269331222.21/iProcess/TUEV-RHEIN1346655405.6/view>

⁶ P.16 of the approved verification report /10/

⁷ P.17 of the approved verification report /10/

⁸ P.14 of the approved verification report /10/

report

/10/.

Project physical features (technology, project equipment, monitoring and metering equipment)	<i>The total installed capacity is 13.1495 MW_{thermal} which consists of 17,000 parabolic type solar cookers each with 775.3 W rated power per unit.</i>	
Any Project Design Change been sought and approved by EB for the project?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not applicable	<p><i>The number of townships, where the solar cookers were distributed, increased from 10 (as indicated in the registered PDD) to 16 by including another 6 townships (i.e. Haicheng, Guanqiao, Liwang, Gancheng, Sanhe and Qiyang) in Haiyuan County. The project boundary of the project remains unchanged as identified as “Haiyuan County” in the registered PDD. The total number of solar cookers also remains consistent with the registered PDD, i.e. 17,000. The verification team confirms that such change does not impact the followings:</i></p> <p><i>(a) The applicability and application of the applied methodology under which the project activity has been registered;</i> <i>(b) The additionality of the project activity;</i> <i>(c) The scale of the project activity.</i></p> <p><i>Thus, according to CDM Project Standard (Version 02.0, EB 70 Annex 2), such change does not require prior approval by the EB.</i></p> <p><i>Please also refer to the detailed discussion in Section 3.1.1 above⁹.</i></p>
Any Revision in Monitoring plan is sought and approved by EB for the project?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<i>There is no revision in monitoring plan for the proposed project.</i>
Does the monitoring report provide line diagram showing all relevant monitoring points?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not applicable	<i>The project is the installation of 17,000 solar cookers for the poor rural residents in north-western China, all of which are the target population of the sampling during monitoring. Thus it is not applicable to present all relevant monitoring points in form of line diagram.</i>

*The above table is directly adopted from Section 3.1.2 of the approved CDM verification report /10/.

The timeline of the project’s implementation is summarized as below:

Milestone of the project activity	Timeline	Assessment by the verification team
Starting date of operation:	02/11/2010	<i>According to the registered PDD and the validation report, it states that the project can be implemented under the revenue from registered as a CDM project. The project was started to implement since project registration</i>

⁹ Refer to Section 3.1.1 of the approved verification report /10/.

Milestone of the project activity	Timeline	Assessment by the verification team
		<p>(i.e. 15 Sept 2010) by placing order, arrangement of distribution to 17000 solar cookers to users and training to the monitoring team members etc.</p> <p>The project owner, NXFI, distributed the solar cookers to 17,000 participant households by the manufacturers with the coordination of local government entity, Haiyuan County Rural Energy Station (HRES) starting from 02/11/2010 /7/, which were after the registration as a CDM project on 15/09/2010. The actual operation could not be prior to the first day of distribution. Therefore, the operation and monitoring of the project activity is started on 02/11/2010.</p>
Registration of the project activity	15/09/2010	It is confirmed from UNFCCC website.
Crediting period		
1st monitoring period	15/09/2010-31/08/2012	It is confirmed within the crediting period that monitoring was conducted and currently under verification.

*The above table is directly adopted from Section 3.1.2 of the approved CDM verification report /10/.

As concluded by Section 3.1.2 of the approved CDM verification report /10/, “with respect to the realized technology, the project equipment as well as the monitoring, the project activity has been implemented and operated as described in the registered PDD”¹⁰. The actual implementation of the project activity is confirmed in line with the registered PDD.

Regarding to the registration as a GS CDM project activity, it is confirmed that the project activity had successfully registered on 26/01/2011 as per the confirmation from a GS technical expert /16/. According to T.1.2.6 of the GS Toolkit /1.1/, a maximum period of 2 years prior to the GS registration is eligible for the PP to claim GS CERs credit from the project activity. Therefore, the indicated sustainability monitoring period (i.e. 15/09/2010 – 31/08/2012) is confirmed valid.

According to the final sustainability monitoring report (hereafter called “SMR”), a survey for the monitoring of sustainability monitoring parameters was conducted on 28-29/06/2013 when was later than the indicated sustainability monitoring period. It is reported by the PP /i/ that the actual sustainability monitoring works (i.e. the survey done to 30 sampled users on 28-29/06/2013) for this sustainability verification was allowed to be implemented after the GS registration date. For the future sustainability monitoring period, it shall follow the monitoring frequency indicated in the sustainability monitoring plan of the registered GS Passport /5/. The verification team has confirmed from the GS technical expert via email communication /16/ that the survey can cover the sustainability monitoring period. Therefore, the implementation of the sustainability monitoring plan was confirmed to be implemented in compliance with relevant GS requirements.

¹⁰ P.19 of the approve verification report /10/

Below is the summary of the actual implementation of the GS sustainability monitoring:

Milestone of the project activity	Timeline	Assessment by the verification team
Registration of the project activity under GSF	26/01/2011	It is confirmed from the GS technical Expert /16/.
Indicated sustainability monitoring period	15/09/2010 – 31/08/2012 (both days included)	As per the T.1.2.6 of the GS Toolkits, it stipulates that project activity applying GS CERs is eligible for receiving credits for realised emission reductions up to two years prior to GS registration. The verification team has confirmed this sustainability monitoring period complying with the requirement as the registration date was confirmed as 26/02/2011.
Referenced 1st CDM monitoring period	15/09/2010-31/08/2012 (both days included)	It is confirmed from the approved CDM monitoring report /9/ and verification report /10/. It is consistent with the indicated sustainability monitoring period.
Survey for the 1st sustainability monitoring	28-29/06/2013	The 30 sets questionnaires filled by the users /14.1/ have been checked during OSV. The date of the survey is confirmed as 28-29/06/2013. Through physical interviews with the users and the officers of Haiyuan County Rural Energy Station (HRES) who took part in the survey, the verification team confirms the same date of survey as reported by the final SMR. It is confirmed from a GS technical expert that the survey can cover the sustainability monitoring period.

In summary, the project implementation is consistent with the project design illustrated in the registered PDD /4/ and GS Passport /5/. The sustainability monitoring period is reasonable and the actual implementation of the project activity is appropriate to its GS development.

3.2 Compliance of the GHG monitoring plan with the GHG monitoring methodology

According to the registered PDD /4/, the project activity applies AMS-I.C/Version 14 for the GHG monitoring. It is confirmed by the approved validation report /8/ that the monitoring plan in the registered PDD complies with the applied monitoring methodology. Regarding the issued CERs under the 1st CDM monitoring period, it is confirmed by the approved CDM verification report /10/ for the compliance with the monitoring requirement of the applied methodology. Please refer to Section 3.2 of the approved verification report for details.

3.3 Compliance of the actual sustainability monitoring with the sustainability monitoring plan and Gold Standard conservativeness principle

The verification team reviewed the sustainability monitoring results reported in the final sustainability monitoring report /12.2/ and conducted an on-site visit so as to (i) verify the compliance of the sustainability monitoring with the sustainability monitoring plan contained in the registered PDD /4/ and also the registered GS Passport /5/; and (ii) confirm the project contributions to sustainable development during the indicated sustainability monitoring period.

3.3.1 Monitored parameters

GHG Emission Reductions

For monitoring parameters related to calculation of GHG emission reductions, they have been assessed in the approved CDM verification report for the 1st CDM periodic monitoring period (15/09/2010 – 31/08/2012, both days included). According to the registered PDD /4/ and the applied methodology AMS-I.C/Version 14, the emission reductions (ER_y) are calculated as follows:

$$ER_y = BE_y - PE_y - L_y$$

Whereas

Baseline emission:

$$BE_y = n * \Sigma [773.5 * (R_i / 700) * t_i * (3.6 * 10^{-9})] * EF_{CO_2} / \eta_{th}$$

PE_y and L_y are zero.

As verified by the approved CDM verification report /10/, the GHG emission reductions of the project activity for the 1st CDM periodic monitoring period is:

$$ER_y = (29,297 + 35,441) \text{ tCO}_2\text{e} - 0 - 0 = 64,738 \text{ tCO}_2\text{e}$$

It has been verified by a DOE and approved by the CDM EB on 19/02/2013, the CERs issued for the 1st CDM periodic monitoring period (i.e. 15/09/2010 – 31/08/2012, both days included) is confirmed as 64,738tCO₂e. The issued CERs are deemed conservative.

Sustainable Development

The sustainability monitoring is required by the GS and assessed according to the GS Toolkit Annex I /1.2/. According to GS Toolkit 2.4.3, all non-neutral indicators must be monitored, and any indicators that were neutralized (i.e. originally scored negative, but later score neutral due to a suitable mitigation measure) must also be included. Moreover, any sensitive issue brought up during the stakeholder consultation must also be included. The verification team has reviewed the LSC report /7/, there was neither negative comment nor sensitive issues raised to the project activity. As a result, the 5 sustainability monitoring parameters included in the sustainability monitoring plan of the registered GS Passport are the focus of this sustainability verification.

Indicator	Verification findings	
ID 1	Chosen	SOx emission reduction

Air Quality	Parameter								
	Value	242.7t							
	Source	CDM monitoring report, monitoring records, and ER spreadsheet							
	Verification opinion	<p>According to the SMR, the SO₂ emission reductions is calculated based on coal saved by the solar cooker users during the sustainability monitoring period. The amount of saved coal consumption is derived based on the issued CERs for the 1st CDM periodic monitoring period.</p> <p>The coal saving is calculated by: Coal savings (t) = CERs (tCO₂)/2.66772 (tCO₂/t) = 64738/2.66772 =24267.16t</p> <p>Then, the SO₂ emission reductions is calculated by: SO₂ emission reduction (t) = Coal savings (t)*S%*M_{SO₂}/M_S = 24267.16*0.5%*32/16 = 242.7t</p> <p>The verification team confirms the calculation steps and the applied <i>ex-ante</i> parameters in the equations are consistent with the Passport. Since the reduction in SO₂ is based on the verified GHG emission reductions, it is confirmed to be traceable and reliable. The SO₂ emission reduction is therefore confirmed as 242.7t. Therefore, the score of ID 1 Air Quality should be positive.</p>							
Verified Score	+								
ID 2 Access to affordable and clean energy services	Chosen Parameter	1. The number of solar cookers installed							
	Value	17,000 and 16,997 units of operational solar cooker for the 1 st (15/09/2010 – 31/08/2011) and 2 nd (01/09/2011 – 31/08/2012) sub-period respectively.							
	Source	Monitoring records and sales contract							
	Verification opinion	<p>It is reported that the monitoring was done by monitoring team A through visiting each of the users physically. They had checked whether the logo of the project and user name are on the solar cookers and hence determine whether the cookers were operational.</p> <p>The verification team has reviewed the CDM verification report /10/, the no. of installed solar cooker was verified as 17,000 units which was based on the records of solar cooker purchase contract. Then the no. of operational solar cooker was monitored by a monitoring team which consisted of the staff from the PP and also officers from HRES. The monitoring was done by using survey method. The verification report confirmed the monitoring procedures are in line with the register PDD (refer to Section 3.3.1 of the CDM verification report) as well as the GS Passport.</p> <p>Based on the above findings, the verified no. of operational solar cooker during the sustainability monitoring period is tabulated as follows:</p> <table border="1" data-bbox="609 1606 1477 1795"> <thead> <tr> <th></th> <th>Data obtained by 1st monitoring sub-period (for 15/09/2010 ~ 31/08/2011)</th> <th>Data obtained by 2nd monitoring sub-period (for 01/09/2011 ~ 31/08/2012)</th> </tr> </thead> <tbody> <tr> <td>Verified operational solar cooker (units)</td> <td>17,000</td> <td>16,997</td> </tr> </tbody> </table>			Data obtained by 1st monitoring sub-period (for 15/09/2010 ~ 31/08/2011)	Data obtained by 2nd monitoring sub-period (for 01/09/2011 ~ 31/08/2012)	Verified operational solar cooker (units)	17,000	16,997
		Data obtained by 1st monitoring sub-period (for 15/09/2010 ~ 31/08/2011)	Data obtained by 2nd monitoring sub-period (for 01/09/2011 ~ 31/08/2012)						
	Verified operational solar cooker (units)	17,000	16,997						
Chosen Parameter	2. solar cooker usage time								
Value	127.08 hrs per month / 4.236hrs per day (average value)								

	Source	Monitoring records
	Verification opinion	<p>It is reported that the monitoring of solar cooker usage time is done by sampling survey method. 2 sets of sampled users were selected randomly for each of the sub-monitoring period. As per Section 3.3.1 of the approved CDM verification report, the same average monthly solar cooker usage time can be confirmed. Since the data has been verified, the reported data is reliable. Therefore, the average monthly usage time is confirmed as 127.08 hrs (4.236hrs per day¹¹)</p> <p>By considering the operational solar cooker allows the users to get accessed to clean renewable energy, the score of ID2 Access to affordable and clean energy services should be positive.</p>
	Verified Score	+
ID 3 Human and institutional capacity	Chosen Parameter	1. The number of solar cookers installed
	Value	17,000 units
	Source	the monitoring report of the 1 st CDM monitoring period and sales contract
	Verification opinion	By reviewing the approved CDM verification report, the verification team can confirmed the same verified figures of the 1 st CDM periodic monitoring period. According to the approved CDM verification report, the no. of installed solar cooker was verified as 17,000 units which was based on the records of solar cooker purchase contract. The monitoring method is considered in compliance with the registered GS Passport.
	Chosen Parameter	2. The training records
	Value	1 training record
	Source	Training record
	Verification opinion	<p>It is reported that every household who gets a solar cooker would receive the training on how to use solar cookers and some knowledge of solar-energy</p> <p>The PP is interviewed during the OSV for the implementation details of the training given to the households users. It is reported that the users will be trained for the appropriate cooker operation by the supplier at the time of receiving the cooker. After training, each user will be given a calendar which has listed the operation guidelines as well as the service hotlines. In additions, at the promotional phase of the project development, a promotional video clip was shown via the local broadcasting system.</p> <p>The verification team had confirmed from interview with the users that they had received training when they receive the solar cookers. The PP has further provided a statement issued by HRES /15/ which confirms the PP has conducted the following regarding trainings:</p> <ol style="list-style-type: none"> 1. 3 times of broadcasting the training video clip before project implementation. It covered installation, operation, maintenance and safety precautions. 2. Training, which was conducted by the suppliers, was given to every household user when they received the solar cooker. It covered installation, operation, maintenance and safety precautions. 3. Every user was given a calendar which listed the key points of installation, operation, maintenance and safety precautions.

¹¹ 127.08 hrs/ 30 days = 4.236 hrs per day

		<p>4. Every user was given a service hotline which allows the user to enquire for any issues relating to the solar cooker operations.</p> <p>Based on the above findings, all the solar cooker users are confirmed having received the training on solar cooker operations. The score of ID 3 Human and institutional capacity should be positive.</p>
	Verified Score	+
ID 4 Livelihood of the poor	Chosen Parameter	Saved expenditure and health benefits
	Value	100% sampled users agreed the expenditure on coal was lesser 100% sampled users agreed they had less diseases caused by bad indoor air quality
	Source	Monitoring survey
	Verification opinion	<p>According to the SMR, the monitoring was conducted by carrying out a survey on 28-29/06/2013. A total of 30 users were sampled randomly by the monitoring team through on-site visiting the users. It is concluded that using solar cookers helped users save expenditures and brought health benefits to users during this monitoring period. The method of monitoring is considered in compliance with the registered GS Passport.</p> <p>The verification team has checked the 30 sets filled questionnaires /14.1/ during OSV. It is confirmed that the results are consistent with the result recorded in GS710 Questionnaires to Users – Analysis and Conclusion /13/. The PP concludes from the results that “<i>using solar cookers helped users save expenditures and brought health benefits to users during this monitoring period</i>”.</p> <p>Furthermore, the verification team has visited all 30 sampled households during OSV, of which 29 out of the 30 users were successfully interviewed, for the assessment of PP’s conclusion on the survey results. Based on the observations on the living environment and the user’s responses, the verification team confirms that all the interviewed users agreed 1.) their expenditure on coal purchase has reduced; 2.) they had less diseases induced by bad indoor air quality, when compared with the time before using the solar cookers.</p> <p>Therefore, as a matter of fact that the users enjoyed economic and health benefits since using the solar cooker, the score of ID 4 Livelihood of the poor should be positive.</p>
	Verified Score	+
ID 5 Quantitative employment and income generation	Chosen Parameter	Employment and income increase
	Value	More employment opportunities were created for local people by the solar cooker project.
	Source	manufacturer questionnaires
	Verification opinion	<p>The monitoring was done by interviewing the solar cooker manufacturers via telephone on 28/06/2013. Their opinions on whether the two aspects: 1.) the availability of position or jobs for employee; 2.) the income of the employee, had been influenced by taking part in the project activity. The method of monitoring is considered in compliance with the registered GS Passport.</p> <p>As per the reported results, the verification team has checked the manufacturer interview records /14.2/ done by the PP for the interviews with the solar cooker manufacturers and hence found the same results. The records shows that all the</p>

		<p>4 manufacturers agreed more employment opportunities and employee's income were created by supplying solar cookers to the project activity.</p> <p>The verification team had visited 2 of the manufacturers during OSV, the owners /ii/ /iii/ had confirmed that more workers were employed so as to produce the solar cookers for the project activity. At the meantime, the income of the workers had increased significantly.</p> <p>As a matter of fact that more job opportunity and income of the workers were induced by taking part in the manufacturing process of the solar cooker, the score of ID 5 Quantitative employment and income generation should be positive.</p>
	Verified Score	+

According to Gold Standard Toolkit Section 2.4.3, “*all mitigation measures put in place to prevent violation or the risk of violating a safeguarding principle of the ‘Do No Harm’ Assessment*” shall be monitored. As per the registered GS Passport, there is no mitigation measure to be included in the monitoring.

In summary, the sustainability monitoring was implemented and reported in compliance with the registered Passport and related GS requirements.

3.3.2 Monitoring responsibility

In the CDM monitoring report, the monitoring responsibility of the project activity was described. It involves the project owner and Haiyuan County Rural Energy Station (HRES). The project owner is responsible for the overall management of the monitoring, while HRES join together with the monitoring team from the project owner to conduct on-site monitoring works or survey. It is confirmed from the PP /i/ that the management of sustainability monitoring was included under the same monitoring system as the GHG monitoring.

It is consistent with that described in the monitoring plan of the registered PDD and also confirmed from on-site interview with the relevant personnel who took part in the monitoring /ii/ /v/ /vi/. With reference to the approved CDM verification report, the monitoring responsibility of each monitoring personnel was handled according to the monitoring plan of registered PDD and the responsible personnel were clearly aware of monitoring procedures and were capable to work on their responsibilities.

3.3.3 Deviation from and revision of the registered monitoring plan

The verification team confirms that there is no deviation from or revision of the GHG and sustainability monitoring plan in the registered PDD /4/ and GS Passport /5/. The same monitoring approaches as per the monitoring plans were implemented in this sustainability monitoring period. Thus the current estimation of GHG emission reductions and sustainability monitoring during the indicated sustainability monitoring period from 15/09/2010 to 31/08/2012 is confirmed to be correctly applied.

3.4 Assessment of data and calculation of GHG emission reductions

A total of 64,738t CERs for the 1st periodic CDM monitoring period (i.e. 15/09/2010 – 31/08/2012) was issued by the CDM EB on 19/03/2013. The verification team has reviewed the CDM monitoring report /9/ and the verification report /10/ approved ER calculations spreadsheet /11/ for the corresponding 1st CDM periodic monitoring period, it is confirmed that the GHG monitoring was implemented according to the monitoring plan in the registered PDD, the applied methodology, and all relevant CDM requirements. Since 2% of the issued CER was deducted for the CDM Adaptation fund the verified GS CER is calculated by $64,738 * (1-2\%) = 63,443\text{tCO}_2\text{e}$. Therefore, the amount of GS CER under this request for issuance is confirmed to be 63,443tCO₂e.

Assessment of Materiality in Verificaiton

According to the approved CDM verification report, the materiality in verification is assessed against “Guidelines on the Applicability of Materiality in Verifications”. The verification opinions has concluded as “*the verification team can confirm that the claimed emission reductions are free from material errors, omissions or misstatements with a reasonable level of assurance.*”¹².

Therefore, the issued CERs are confirmed free from material errors, omissions or misstatements with a reasonable level of assurance.

3.5 Assessment of contributions to sustainable development

In accordance with the requirement of the GS Toolkit (version 2.1, section 4.1), the monitored sustainability indicators are also scored in the monitoring report by comparing with the baseline sustainable indicator situations, which is also confirmed by the verification team in the discussion in section 3.3.1 above.

The project has applied the sustainable development assessment matrix as required by the Gold Standard. The total score obtained is +5 based on the verification results in the indicated sustainability monitoring period, while other indicators are neutral. The scoring in each section is summarized below:

- Environment scores a subtotal of +1 (positive impact to air quality);
- Social development scores a subtotal of +3 (positive impacts to access to affordable and clean energy services, human and institutional capacity, and livelihood of the poor);
- Economic and technological development scores a subtotal of +1 (positive impact to quantitative employment and income generation).

With regards to FAR1 raised during the GS registration review stage /17/, the DOE is requested to interview the additional 6 townships about SD indicator and Do No Harm during the first verification. The verification team has conducted successful interviews with stakeholder from 5 out of the 6 additional townships as tabulated below:

Date	Additional township	Visited township
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¹² Refer to P.37 of the CDM verification report /10/.

24-25/07/2013	<ol style="list-style-type: none"> 1. Haicheng 2. Guanqiao 3. Liwang 4. Sanhe 5. Qiyong 6. Gancheng 	<ol style="list-style-type: none"> 1. Haicheng 2. Guanqiao 3. Liwang 4. Sanhe 5. Qiyong
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“Do no harm” assessment

Based on on-site observation and stakeholder interview, the project implementation in the visited 5 townships are consistent with that of the initial 10 townships as per the registered PDD. And according to the verification report /10/, it further confirms the project implementations are the same in all the 16 townships. The verification team considers the project implementations in the 6 additional townships are deemed consistent. By reviewing section F.1 of the registered Passport /5/ and Section 5 of sustainability validation report /6/, it is concluded that the 6 newly added townships will not impose any adverse impact to the conclusion made during the validation. It is because the project is found implemented consistently in the additional townships to which the justifications provided in the Passport are still applicable. All of the 11 safeguard principles in “Do no harm” assessment reported in the Passport are hence confirmed valid and applicable to the 6 additional townships.

Detailed Impact assessment

Detailed assessment has been applied to establish the sustainable development matrix in Section F.2 of the GS Passport. According to GS Toolkit Section 2.4 and Annex I, the verification of sustainable development matrix to the 6 additional townships is tabulated below:

Indicator	Preliminary Score proposed in the GS Passport	Validation Team’s opinion ¹³	Verification opinion
Environment			
Air quality	+	<i>The validation team considers that the project brings positive impact to the air quality. The solar cooker can replace the use of coal as fuel for cooking and water heating, and thus reduce soot (total suspended particulate matter), CO and SOx emissions. The preliminary score for the air quality is confirmed to be “+”.</i>	By on-site observations, household interviews and document review, it is confirmed that “ <i>The solar cooker can replace the use of coal as fuel for cooking and water heating, and thus reduce soot (total suspended particulate matter), CO and SOx emissions</i> ” is applicable to the additional 6 townships. The score is confirmed as “+”. Refer to Section 3.3.1 in the above for

¹³ Directly adopted from the registered sustainability validation report /6/. All the information and references quoted in this column shall refer to the validation report accordingly.

			detailed assessment.
Water quality and quantity	0	<i>According to the on-site interview with the project owner and review of EIA registration form /13/, the validation team confirms that the operation of solar cooker does not involve the water usage. In addition, as per the manufacturer's information /52-53/, the production of solar cooker involves the adherence of reflective surface on the cooker framework, but it does not involve in contact with water. Thus the project would not cause negative impact to the water quality and quantity, and the preliminary score is confirmed to be "0".</i>	By on-site observations, stakeholder interviews and document review, it is confirmed that <i>"the operation of solar cooker does not involve the water usage"</i> is applicable to the additional 6 townships. The score is confirmed as "0".
Soil condition	0	<i>The validation team considers the operation of solar cooker does not involve any impact to the soil environment. The placement of solar cookers will also not occupy any farmland areas. In addition, there is no indication of soil pollution in the registration form of Environment Impact /13/, as the project does not release any pollutants that will affect the soil condition. Thus the preliminary score is confirmed to be "0".</i>	By on-site observations and document review, it is confirmed that <i>"the operation of solar cooker does not involve any impact to the soil environment"</i> is applicable to the additional 6 townships. The score is confirmed as "0".
Other pollutants	0	<i>The validation team considers that the solar cooker can replace the use of coal as fuel for cooking and water heating, and thus reduce the cinder generation as a by-product of coal burning. This can reduce the solid wastes generated. The validation team also considers that light and noise pollution would unlikely arise during the operation of solar cookers. Thus the preliminary score is confirmed to be "0".</i>	By on-site observations, household interviews and document review, it is confirmed that <i>"the solar cooker can replace the use of coal as fuel for cooking and water heating, and thus reduce the cinder generation as a by-product of coal burning. This can reduce the solid wastes generated. The validation team also considers that light and noise pollution would unlikely arise during the operation of solar cookers."</i> is applicable to the additional 6 townships. The score is confirmed as "0".
Biodiversity	0	<i>During the operation of solar cookers, sunlight is captured for heating purpose, and there should be no impact on the</i>	By on-site observations, and document review, it is confirmed that <i>"During the operation of solar cookers, sunlight is captured for</i>

		<i>biodiversity of living organisms. Thus the preliminary score is confirmed to be “0”.</i>	<i>heating purpose, and there should be no impact on the biodiversity of living organisms” is applicable to the additional 6 townships. The score is confirmed as “0”.</i>
Social Development			
Quality of employment	0	<i>The local employment opportunities will be increased for the monitoring work. There will be no obviously adverse impact on the quality of employment, thus the score of “quality of employment” can be considered as “0”.</i>	By stakeholder interviews, it is confirmed that “ <i>There will be no obviously adverse impact on the quality of employment</i> ” is applicable to the additional 6 townships. The score is confirmed as “0”.
Livelihood of the poor	+	<i>Cooking and water heating are the basic necessity for the daily life of local residents, and coal is the major fuel used by the villagers. The validation team considers that the local residents can save the money for buying coal by using solar cookers. In this regards, the project activity can alleviate poverty of the villagers. In addition, the use of solar cooker would reduce the coal consumption, and thus the pollutant emissions. This would induce better air quality thus better health condition for the solar cooker users. According to project owner, the money saved from reducing coal purchasing and health condition can be monitored by survey. Therefore the preliminary score for “livelihood of the poor” is confirmed to be “+”.</i>	By on-site observations, household interviews and document review, it is confirmed that “ <i>the local residents can save the money for buying coal by using solar cookers. In this regards, the project activity can alleviate poverty of the villagers. In addition, the use of solar cooker would reduce the coal consumption, and thus the pollutant emissions. This would induce better air quality thus better health condition for the solar cooker users.</i> ” is applicable to the additional 6 townships. The score is confirmed as “+”. Refer to Section 3.3.1 in the above for detailed assessment.
Access to affordable and clean energy services	+	<i>The validation team considers that the project activity helps the local residents to access and use the clean energy directly. The solar energy is also affordable by the villagers. In addition, it reduces the dependency of coal usage for the solar cooker users. The validation team considers that the total number of operational solar cookers and the total corresponding usage time can be measured</i>	By on-site observations, household interviews and document review, it is confirmed that “ <i>that the project activity helps the local residents ... This can reflect the actual access of solar cooker usage thus the clean energy services</i> ” is applicable to the additional 6 townships. The score is confirmed as “+”. Refer to Section 3.3.1 in the above for detailed assessment.

		<p><i>quantitatively. This can reflect the actual access of solar cooker usage thus the clean energy services. The preliminary score for “access to affordable and clean energy services” is confirmed to be “+”.</i></p>	
Human and institutional capacity	+	<p><i>The validation team agrees that the project activity can help the spread of knowledge for the usage of clean energy, and the villagers are contributed to energy-saving and emission-reduction.</i></p> <p><i>According to the PP, every solar cooker end-user will receive the training on hand-on solar cooker operation and simple maintenance. In addition, every end-user will receive the environmental training and the concept of CER ownership for the project /16/ along with relevant operation and maintenance guidance /17/. When the solar cookers are distributed to the end-users, they will sign the transfer of CER ownership agreement with the project owner, thus this indicates that they have the participation in the project CDM development and decision-making process /18/.</i></p> <p><i>Therefore the validation team agrees that the project can bring positive impact to “human and institutional capacity” and the number of operational solar cookers can be an indirect indicator for the improvement in the “human and institutional capacity” as it indicates the no. of people received technical and CDM training. The preliminary score for “human and institutional capacity” is confirmed to be “+”.</i></p>	<p>By stakeholder interviews and document review, it is confirmed that “the project can bring positive impact to “human and institutional capacity” and the number of operational solar cookers can be an indirect indicator for the improvement in the “human and institutional capacity” as it indicates the no. of people received technical and CDM training.” is applicable to the additional 6 townships. The score is confirmed as “+”. Refer to Section 3.3.1 in the above for detailed assessment.</p>
Economic and technological development			
Quantitative	+	<i>The validation team considers</i>	By stakeholder interviews and

employment and income generation		<i>the jobs will be created for local residents during the project monitoring works. In addition, job opportunities would be also enhanced for the manufacturers in order to fabricate the solar cookers required in the project. As reported from the project owner, the overall income of the staff will be improved compared to the baseline. Thus there will be positive impact on the employment quantity and income, the score of “quantitative employment and income generation” can be considered as “+”.</i>	document review, it is confirmed that “ <i>there will be positive impact on the employment quantity and income</i> ” is applicable to the additional 6 townships. The score is confirmed as “+”. Refer to Section 3.3.1 in the above for detailed assessment.
Balance of payments and investment	0	<i>According to the registered PDD, the upfront project investment will be raised by internal accrual only. Thus the project activity has no impact to balance of payments and investment. The preliminary score for the air quality is confirmed to be “0”.</i>	By document review, it is confirmed that “ <i>project activity has no impact to balance of payments and investment</i> ” is applicable to the additional 6 townships. The score is confirmed as “0”.
Technology transfer and technological self-reliance	0	<i>According to GS Toolkit Annex I /4/, the technology transfer involves the activities that build usable and sustainable know-how in a region where the know-how was previously lacking. The project activity can assist the spread of CDM concept and solar cooker technology to rural villages. In addition, there is no obviously adverse impact to the technology transfer. Thus the score of “technology transfer and technological self-reliance” is considered as “0”.</i>	By on-site observations and document review, it is confirmed that “ <i>there is no obviously adverse impact to the technology transfer</i> ” is applicable to the additional 6 townships. The score is confirmed as “0”.

Based on the above assessments, it is concluded that the additional 6 townships has no adverse impact to the conclusion of detailed impact assessment made in the sustainability validation report. Thus the project is eligible under the Gold Standard as per GS Toolkit Section 2.4.2, in which the project activity contributes positively to all three categories of sustainable development indicators (i.e. Environment, Social development and Economic and technological development).

3.6 Issues remaining from the previous verification period

Since this is the 1st sustainability verification of the project activity and no previous verification was carried out, this section is not applicable. The FAR1 raised in the GS registration review stage /17/ has been addressed in Section 3.5.

It is noted that FAR2 is raised in the course of GS issuance review stage /18/ by the GS. It is reported in Table 3 of Appendix A of this verification report.

Appendix A

VERIFICATION PROTOCOL
- FOR GOLD STANDARD CDM PROJECT -

PROJECT TITLE: FEDERAL INTERTRADE HAIYUAN SOLAR COOKER PROJECT

PROJECT LOCATION: P.R. CHINA

REPORT No. 01 996 9105053901-1st VE

Table 1: Verification Requirements

(based on §56, §57 and §62 of the CDM Modalities and Procedures and on CDM Verification and Verification Standard, Annex 3 of EB 70, and GS Toolkit Version 2.1, Annex I, Annex K)

Checklist question	Ref.	MoV*	Findings, comments, references, data sources	Draft conclusion	Final conclusion
1. Implementation					
1.1 Have all physical features proposed in the registered PDD been implemented at the project site? § 187 of CDM Project Standard	/1/ /4/ /5/ /9/ /10/	DR I	The project activity is to disseminate solar cooker in 16 townships of Haiyaun County. As per the registered PDD and the validation report, the first order of ICSSs was made on 02/11/2010. Until the end of the indicated sustainability monitoring period (1 st monitoring period) from 15/09/2010 to 31/08/2012 (both days included), a total of 17,000 units of solar cookers were delivered and installed in 16 townships of Haiyuan County. The same has been verified by the 1 st CDM periodic verification report (with the same monitoring period). It is consistent with the registered PDD. The verification team also confirms that there was no change of the project implementation during this monitoring period.	OK	OK
1.2 Has the project activity been operated in accordance with the project scenario described in the registered PDD and relevant guidance? Reference: < http://cdm.unfccc.int/EB/033/eb33rep.pdf >,	/1/ 4/ /5/ /9/ /10/	DR I	Idem	OK	OK

* MoV = Means of Verification, DR = Document Review, I = Interview, www = internet search.
Revision No.: 01.2

<p>§75 § 185 of CDM Project Standard</p>					
<p>1.3 If the project activity is implemented on a number of different locations, has the Monitoring report provided the verifiable starting dates for each site? § 188of CDM Project Standard</p>	<p>/1/ 4/ /5/ /9/ /10/ /12.1/</p>	<p>DR I</p>	<p>Not applicable. Although the project activity includes 16 townships of Haiyuan County, it is considered as one project location as per the register PDD. The project start date is confirmed as 02/11/2010 according to the CDM verification report.</p>	<p>N/A</p>	<p>N/A</p>
<p>1.4 Is the start date of monitoring period consistent?</p>	<p>/1/ /4/ /5/ /9/ /10/ /12.1/</p>	<p>DR I</p>	<p>As per the sustainability monitoring report, the indicated sustainability monitoring period is 15/09/2010 – 31/08/2012. According to T.1.2.6 of the GS Toolkit /1.1/, a maximum period of 2 years prior to the GS registration is eligible for the PP to claim GS CERs credit from the project activity. Therefore, please indicate the GS registration date of the project activity and hence clarify whether the indicated sustainability monitoring period is in compliance with this requirement. The verification team cannot yet confirm the indicated sustainability monitoring period. CL01 is raised.</p> <p>CL01</p> <p>The verification team cannot yet confirm the indicated sustainability monitoring period. Please indicate the GS registration date of the project activity and hence clarify whether the indicated sustainability monitoring period (i.e. 15/09/2010 – 31/08/2012) is in compliance with the requirement</p>	<p>CL01</p>	<p>OK. (Refer to Table 2 for detailed assessment)</p>

			stipulated in T.1.2.6 of GS Toolkit/ Version 2.1.		
1.5	Is the monitoring report consistently filled with respect to all sections as required by its guideline of filling the monitoring report?	/1/ /2/ /12.1	DR	Yes. The sustainability monitoring report is prepared in accordance with the requirement of T.4.1 of the Toolkit.	OK OK
1.6	Does the CER's obtained for the monitoring period within the limit of estimate in the registered PDD? Request for justification for higher estimated CER if not clarified.	/1/ /2/ /9/ /10/ /12.1/	DR	No. According to Section 3.4.1 of the approved CDM verification report, the verified ER for the 1 st CDM periodic monitoring period is slightly lower than the estimated value.	OK OK
1.7	Is the monitoring system provided in line diagrams showing all relevant monitoring points?	/1/ /2/ /4/ /9/ /10/	DR I	According to the approved CDM monitoring report, it includes a diagram to show the monitoring system. The approved CDM verification report has confirmed the same monitoring system for the 1 st CDM periodic monitoring period. For the sustainability monitoring, the verification team confirms from the PP that it is also included under the same monitoring system.	OK OK
2. Monitoring plan and methodology					
2.1	Is the monitoring plan established in accordance with the monitoring methodology? § 186 of CDM Project Standard	/1/ /4/ /5/ /12.1/ /13/	DR I	The GHG monitoring plan is confirmed in accordance with the registered PDD. However, regarding the sustainability monitoring plan, it is reported that a survey was conducted on 28-29/06/2013 for some of the sustainability monitoring indicators. The PP explained that it was agreed by the GS to use the result from this survey for the indicated sustainability monitoring period. CL02 is raised.	CL02 OK. (Refer to Table 2 for detailed assessment)

			<p><u>CL02</u></p> <p>It is reported by the PP that they are allowed to apply the results from the survey done on 28/06/2013 as the sustainability monitoring data for the indicated sustainability monitoring period. The PP is requested to clarify whether it is agreed by the GSF for such arrangement.</p>		
<p>2.2 In case the implemented monitoring plan defers from the monitoring methodology, has any requests for revision to or deviation from the monitoring methodology been officially communicated to the CDM EB?</p> <p>Reference: § 209,210,211 of CDM Project Standard (for temporary deviation) § 212,213 of CDM Project Standard (for permanent change)</p>	<p>/1/ /4/ /5/ /12.1/ /13/</p>	<p>DR I</p>	<p>Idem.</p>	<p><u>CL02</u></p>	<p>OK. (Refer to Table 2 for detailed assessment)</p>
<p>2.2.1 Have the above changes to the monitoring plan been approved by the CDM EB?</p>	<p>/1/ /4/ /5/ /12.1/ /13/</p>	<p>DR I</p>	<p>Idem.</p>	<p><u>CL02</u></p>	<p>OK. (Refer to Table 2 for detailed assessment)</p>
<p>3. Monitoring and the monitoring plan</p>					
<p>3.1 Is monitoring established in full compliance with the monitoring plan, contained in the registered PDD (or new monitoring plan approved by the CDM EB)?</p> <p>§ 229 of CDM Validation and Verification Standard</p>	<p>/1/ /4/ /5/ /9/ /10/ /12.1/</p>	<p>DR I</p>	<p>The verification team checked the actual monitoring via document check and on-site interviews with the project owner, and monitoring personnel, and confirmed that the actual monitoring is established in full compliance with the description of the GHG monitoring plan in the registered PDD.</p>	<p><u>CL01</u> <u>CL02</u></p>	<p>OK. (Refer to Table 2 for detailed assessment)</p>

			However, sustainability monitoring plan is not yet confirmed in compliance with the registered sustainability monitoring plan in the GS Passport. Refer to CL01 and CL02 .		
3.2 Are all baseline emission parameters monitored and updated in accordance with monitoring plan, monitoring methodology and relevant CDM EB decisions?	/1/ /3/ /4/ /9/ /11/	DR I	Yes. All baseline emission parameters monitored and updated in accordance with GHG monitoring plan in the registered PDD, monitoring methodology AMS-I.C./Version 14 and relevant CDM EB decisions. It has been verified by the approved verification report. Refer to Section 3.4 of the verification report.	OK	OK
3.2.1 Was the monitoring equipment for baseline emission parameters controlled and monitoring results recorded as per approved frequency?	/1/ /4/ /5/ /9/ /10/	DR I	Not applicable. There is no monitoring equipment involved in the monitoring.	N/A	N/A
3.2.2 Was the monitoring equipment for baseline emission parameters calibrated in accordance with QA&QC procedures described in the registered monitoring plan?	/1/ /4/ /5/ /9/ /10/	DR I	Idem	N/A	N/A
3.3 Are all project emission parameters monitored and updated in accordance with monitoring plan, monitoring methodology and relevant CDM EB decisions?	/1/ /4/ /5/ /9/ /10/	DR I	According to registered PDD, the project emission is deemed zero. It is confirmed from the approved CDM verification report that the project emission is verified as zero for the indicated sustainability monitoring period. Refer to Section 3.4 of the verification report.	OK	OK
3.3.1 Was the monitoring equipment for project emission parameters controlled and monitoring results recorded as per approved frequency?	/1/ /4/ /5/ /9/ /10/	DR I	Not applicable. There is no monitoring equipment involved in the monitoring.	N/A	N/A
3.3.2 Was the monitoring equipment for project	/1/ /4/ /5/	DR	Idem	N/A	N/A

emission parameters calibrated in accordance with QA&QC procedures described in the registered monitoring plan?	/9/ /10/	I			
3.4 Are all leakage emission parameters monitored and updated in accordance with monitoring plan, monitoring methodology and relevant CDM EB decisions?	/1/ /4/ /5/ /9/ /10/	DR I	According to registered PDD, the leakage emission is deemed zero. It is confirmed from the approved CDM verification report that the leakage emission is verified as zero for the indicated sustainability monitoring period. Refer to Section 3.4 of the verification report.	OK	OK
3.4.1 Was the monitoring equipment for leakage emission parameters controlled and monitoring results recorded as per approved frequency?	/1/ /4/ /5/ /9/ /10/	DR I	Not applicable. There is no monitoring equipment involved in the monitoring.	N/A	N/A
3.4.2 Was the monitoring equipment for leakage emission parameters calibrated in accordance with QA&QC procedures described in the registered monitoring plan?	/1/ /4/ /5/ /9/ /10/	DR I	Idem	N/A	N/A
3.5 Were all monitoring parameters available and verifiable through the whole monitoring period?	/9/ /10/ /11/ /12.1/ /14.1/ /14.2/	DR I	Yes. The verification team has reviewed the SMR and checked the quoted sources of reference namely the CDM monitoring report, and the corresponding verification report, GS710 Questionnaires to User – Analysis and conclusion. The monitored parameters are cross-checked with the raw data sources including the questionnaires to the users and the interview records of the manufacturer. During OSV, the verification team has interviewed the users and the manufacturers for the assessment of the reported monitoring results. There is no finding was found that contradict to the results.	OK	OK

			Therefore, the monitored sustainability indicators are confirmed traceable through the whole monitoring period.		
3.5.1 In case, only partial monitoring data is available and PP(s) provide estimations or assumptions for the rest of data, was it possible to verify those estimations and assumptions? Reference: < http://cdm.unfccc.int/EB/026/eb26rep.pdf >, §109(b)	/9/ /10/ /11/ /12.1/ /14.1/ /14.2/	DR I	Not applicable, as all the monitoring data were available to the verification team.	N/A	N/A
3.6 Was management and operation system established and operated in accordance with the monitoring plan?	/4/ /5/ /6/ /8/ /9/ /10/	DR I	Yes. As per the interview with the PP, it is confirmed the sustainability monitoring was under the prevailing monitoring system indicated in the register PDD. The monitoring system has been verified by the CDM verification report that the implementation was in compliance with the register PDD. During OSV, the verification team has interviewed related personnel who have taken part in the monitoring, no deviation from the registered monitoring system was found.	OK	OK
3.7 Was it possible to verify that involved management and operation personal is fully aware of the responsibilities and perform all operations according to the registered monitoring plan and internally developed manuals?	/4/ /5/ /6/ /8/ /9/ /10/	DR I	Idem.	OK	OK
3.8 Does the monitoring system provide organizational structure, role and responsibilities, emergency procedures?	/4/ /5/ /6/ /8/ /9/ /10/	DR I	Idem.	OK	OK

<p>3.9 Does any uncertainties identified and addressed?</p>	<p>/4/ /5/ /6/ /8/ /9/ /10/ /11/ /12.1/ /13/ /14/</p>	<p>DR I</p>	<p>No. There is no uncertainty identified through the on-site assessment and document review.</p>	<p>OK</p>	<p>OK</p>
<p>4. Parameters</p>					
<p>4.1 GHG monitored parameters</p>	<p>/9/ /10/ /11/ /12.1/</p>	<p>DR</p>	<p>For the GHG monitoring parameters, the verification team refers directly to the verification opinions of CDM verification report for the 1st CDM periodic monitoring period (i.e. consistent with the indicated sustainability monitoring period). All of the related monitored parameters are confirmed traceable, reliable and conservative. The verification team has no further comments.</p>	<p>OK</p>	<p>OK</p>
<p>4.2 Sustainability monitored indicator Indicator: Air quality Chosen parameter: SOx emission reduction Units: tonne Estimated value (ex-ante): 200t Measured value (ex-post): 242.7t Monitoring frequency: Yearly</p>	<p>/5/ /9/ /10/ /11/ /12.1/</p>	<p>DR I</p>	<p>According to the SMR, the SO₂ emission reductions is calculated based on coal saved by the solar cooker users during the sustainability monitoring period. The amount of saved coal consumption is derived based on the issued CERs for the 1st CDM periodic monitoring period. The coal saving is calculated by: Coal savings (t) = CERs (tCO₂)/2.66772 (tCO₂/t) = 64738/2.66772 =24267.16t Then, the SO₂ emission reductions is calculated by: SO₂ emission reduction (t) = Coal savings (t)*S%*M_{SO₂}/M_S = 24267.16*0.5%*32/16</p>	<p>CL01</p>	<p>OK (Refer to Table 2 for detailed assessment)</p>

			<p>= 242.7t</p> <p>The verification team confirms the calculation steps and the applied <i>ex-ante</i> parameters in the equations are consistent with the Passport.</p> <p>However, since the indicated sustainability monitoring period is not yet confirmed, the verification team cannot yet confirm the reported value and hence draw conclusion on the score of the sustainable indicator. Refer to <u>CL01</u>.</p>		
<p>4.3.1 Sustainability monitored indicator</p> <p>Indicator: Access to affordable and clean energy services</p> <p>Chosen parameter: 1. the number of solar cooker installed</p> <p>Units: units</p> <p>Estimated value (<i>ex-ante</i>): 17,000</p> <p>Measured value (<i>ex-post</i>): 17,000 and 16,997 units of operational solar cooker for the 1st (15/09/2010 – 31/08/2011) and 2nd (01/09/2011 – 31/08/2012) sub-period respectively.</p> <p>Monitoring frequency: Yearly</p>	<p>/5/ /9/ /10/ /11/ /12.1/</p>	<p>DR I</p>	<p>According to the approved CDM verification report, the no. of installed solar cooker was verified as 17,000 units which was based on the records of solar cooker purchase contract. Then the no. of operational solar cooker was monitored by sampling method in accordance with the GHG monitoring plan. The monitoring of the no. of operational solar cooker was done by a monitoring team which consisted of officers from HRES.</p> <p>However, it seems that the SMR has reported the no. of operational solar cooker. <u>CL03</u> is raised for clarifying the reported no. of installed solar cooker as well as the monitoring method.</p> <p>Furthermore, since the sustainability monitoring period is found not in compliance with the GS requirement, the verification team cannot yet</p>	<p><u>CL01</u> <u>CL03</u></p>	<p>OK (Refer to Table 2 for detailed assessment)</p>

			<p>confirm the reported value and hence draw conclusion on the score of the sustainable development indicator. Refer to CL01.</p> <p>CL03</p> <p>Regarding to the reported sustainability monitoring parameters, please respond to the followings:</p> <ol style="list-style-type: none"> 1. Access to affordable and clean energy services: <ol style="list-style-type: none"> A.) The reported no. of installed solar cooker seems to be the operational solar cooker during the 1st CDM periodic monitoring period. Please confirm the reported no. of installed solar cooker for this SD indicator. B.) According to the registered GS Passport, the “Future target for parameter” of solar cooker usage time is 4 hours. Please clarify whether the reported value (i.e. 127.08) is reasonable. 2. Human and institutional capacity: The SMR does not clearly describe how the training record was monitored, please further clarify. 3. Livelihood of the poor: The SMR does not clearly describe how the sampling was done for the survey conducted on 28/06/2013. Please further clarify. 4. Please indicate the scoring of each monitored sustainability indicator in the sustainability monitoring report. 		
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<p>4.3.2 Sustainability monitored indicator Indicator: 2. Access to affordable and clean energy services Chosen parameter: solar cooker usage time Units: hours Estimated value (ex-ante): 4 hrs Measured value (ex-post): 127.08 Monitoring frequency: Yearly</p>	<p>/5/ /9/ /10/ /11/ /12.1/</p>	<p>DR I</p>	<p>By reviewing the approved CDM verification report, it is confirmed that the average monthly usage time of the solar cooker is verified as 127.08 for the 1st CDM periodic monitoring period.</p> <p>However, as per the registered GS Passport, the “Future target for parameter” of solar cooker usage time is 4 hours. Please clarify whether the reported value (i.e. 127.08) is reasonable. Refer to CL03.</p> <p>However, since the sustainability monitoring period is found not in compliance with the GS requirement, the verification team cannot yet confirm the reported value and hence draw conclusion on the score of the sustainable development indicator. Refer to CL01.</p>	<p>CL01 CL03</p>	<p>OK (Refer to Table 2 for detailed assessment)</p>
<p>4.4.1 Sustainability monitored indicator Indicator: Human and institutional capacity Chosen parameter: 1. the number of solar cookers installed Units: units Estimated value (ex-ante): 17,000 units Measured value (ex-post): 17,000 units Monitoring frequency: Yearly</p>	<p>/5/ /9/ /10/ /11/ /12.1/</p>	<p>DR I</p>	<p>By reviewing the approved CDM verification report, the verification team can confirmed the same verified figures of the 1st CDM periodic monitoring period. According to the approved CDM verification report, the no. of installed solar cooker was verified as 17,000 units which was based on the records of solar cooker purchase contract. The monitoring method is considered in compliance with the registered GS Passport.</p>	<p>OK</p>	<p>OK</p>
<p>4.4.2 Sustainability monitored indicator Indicator: Human and institutional capacity</p>	<p>/5/ /9/ /10/ /11/ /12.1/</p>	<p>DR I</p>	<p>The SMR does not clearly describe how the training record was monitored, please clarify. Refer to</p>	<p>CL03</p>	<p>OK (Refer to Table 2 for detailed</p>

<p>Chosen parameter: 2. The training records Units: (nil) Estimated value (ex-ante): 1 Measured value (ex-post): 1 Monitoring frequency: Yearly</p>	<p>/15/</p>	<p>CL03.</p> <p>The PP is interviewed during the OSV for the implementation details of the training given to the household users. It is reported that the users will be trained for the appropriate cooker operation by the supplier at the time of receiving the cooker. After training, each user will be given a calendar which has listed the operation guidelines as well as the service hotlines. In additions, at the promotional phase of the project development, a promotional video clip was shown via the local broadcasting system.</p> <p>The verification team had confirmed from interview with the users that they have received training when they receive the solar cookers. The PP has further provided a statement issued by HRES /15/ which confirms the PP has conducted the following regarding trainings:</p> <ol style="list-style-type: none"> 1. 3 times of broadcasting the training video clip before project implementation. It covered installation, operation, maintenance and safety precautions. 2. Training, which was conducted by the suppliers, was given to every household user when they received the solar cooker. It covered installation, operation, maintenance and safety 	<p>assessment)</p>
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			<p>precautions.</p> <p>3. Every user was given a calendar which listed the key points of installation, operation, maintenance and safety precautions.</p> <p>4. Every user was given a service hotline which allows the user to enquire for any issues relating to the solar cooker operations.</p> <p>Subject to the CL03, the verification team cannot yet confirm the sustainability monitoring on Human and institutional capacity was implemented in accordance with the registered GS Passport. Therefore, a conclusion of on the scoring for this sustainable indicator cannot yet be drawn.</p>		
<p>4.5 Sustainability monitored indicator Indicator: Livelihood of the poor Chosen parameter: saved expenditure and health benefits Units: (nil) Estimated value (ex-ante): The project saves expenditures and brings health benefits for the poor. Measured value (ex-post): It is concluded that using solar cookers helped users save expenditures and brought health benefits to users during this monitoring period. Monitoring frequency: Yearly</p>	<p>/5/ /9/ /10/ /11/ /12.1/ /13/ /14.1/ /15/</p>	<p>DR I</p>	<p>The SMR has described the processes of carrying out the survey by visiting 30 households users randomly and asked them all the questions on the questionnaires. The survey was conducted by the monitoring team on 28/06/2013 by means of physical interview. The PPs is request to further clarify the method of this sampling. Refer to CL03.</p> <p>The verification team has checked the 30 sets filled questionnaires /14.1/ during OSV. It is confirmed that the results are consistent with the result recorded in GS710 Questionnaires to</p>	<p>CL01 CL02 CL03</p>	<p>OK (Refer to Table 2 for detailed assessment)</p>

			<p>Users – Analysis and Conclusion /13/. The PP concludes from the results that “using solar cookers helped users save expenditures and brought health benefits to users during this monitoring period”.</p> <p>The verification team has visited 29 out of the 30 sampled households during OSV for the assessment of PP’s conclusion on the survey result. Based on the observations on the living environment and the user’s responses, the verification team confirms that all the interviewed users agreed 1.) their expenditure on fuel consumption has reduced; 2.) they feel healthier, when compared with time before using the solar cookers.</p> <p>However, subject to CL01 and CL02 the verification team cannot yet confirm the scoring of Livelihood of the poor.</p>		
<p>4.6 Sustainability monitored indicator Indicator: Quantitative employment and income generation Chosen parameter: employment and income increase Units: (nil) Estimated value (ex-ante): Employment positions and employee’s income are increased Measured value (ex-post): more employment opportunities were created for local people by</p>	<p>/5/ /9/ /10/ /11/ /12.1/ /13/ /14.2/ /15/</p>	<p>DR I</p>	<p>The monitoring was done by interviewing the solar cooker manufacturers via telephone on 28/06/2013. Their opinions on whether the two aspects: 1.) the availability of position or jobs for employee; 2.) the income of the employee, had been influenced by taking part in the project activity. The method of monitoring is considered in compliance with the registered GS Passport.</p>	<p>CL01 CL02</p>	<p>OK (Refer to Table 2 for detailed assessment)</p>

<p>the solar cooker project. Monitoring frequency: Yearly</p>			<p>As per the reported results, the verification team has checked the manufacturer interview records /14.2/ done by the PP for the interviews with the solar cooker manufacturers and hence found the same results. The records shows that all the 4 manufacturers agreed more employment opportunities and employee's income were created by supplying solar cookers to the project activity.</p> <p>The verification team had visited 2 of the manufacturers during OSV, the owners /ii/ /iii/ had confirmed that more workers were employed so as to produce the solar cookers for the project activity. At the meantime, the income of the workers had increased significantly.</p> <p>However, subject to CL01 and CL02 the verification team cannot yet confirm the scoring of Quantitative employment and income generation.</p>		
<p>5. Calculations</p>					
<p>5.1 Have all the calculations related to the baseline emissions been carried according to the formulae and methods described in the registered PDD and applied methodology? § 194 of CDM Project Standard</p>	<p>/9/ /10/ /11/ /12.1/</p>	<p>DR I</p>	<p>For the GHG baseline emission calculations, the verification team refers directly to the verification opinions of CDM verification report for the 1st CDM periodic monitoring period (i.e. consistent with the indicated sustainability monitoring period). The calculations are</p>	<p>CL01</p>	<p>OK (Refer to Table 2 for detailed assessment)</p>

			confirmed in line with registered PDD and AMS-I.C. However, for the validity of the indicated sustainability monitoring period, refer to <u>CL01</u> .			
5.2	Have all the calculations related to the project emissions been carried according to the formulae and methods described in the registered PDD and applied methodology?	/9/ /10/ /11/ /12.1/	DR I	The project emissions is verified as zero according to the CDM verification report. The calculations are confirmed in line with registered PDD and AMS-I.C. However, for the validity of the indicated sustainability monitoring period, refer to <u>CL01</u> .	<u>CL01</u>	OK (Refer to Table 2 for detailed assessment)
5.3	Have all the calculations related to the leakage emissions been carried according to the formulae and methods described in the registered PDD and applied methodology?	/9/ /10/ /11/ /12.1/	DR I	The leakage emissions is verified as zero according to the CDM verification report. The calculations are confirmed in line with registered PDD and AMS-I.C. However, for the validity of the indicated sustainability monitoring period, refer to <u>CL01</u> .	<u>CL01</u>	OK (Refer to Table 2 for detailed assessment)

Table 2: List of Requests for Corrective Action (CAR) and Clarification (CL)

No.	CAR/CL	Observation (CAR/CL)	Reference	Summary of project owner response	Verification team conclusion
1.	✓	CL01 The verification team cannot yet confirm the indicated sustainability monitoring period. Please indicate the GS registration date of the project activity and hence clarify whether the indicated sustainability monitoring period (i.e. 15/09/2010 – 31/08/2012) is in compliance with the requirement stipulated in T.1.2.6 of GS Toolkit/ Version 2.1.	1.4, 3.1, 4.2, 4.3.1, 4.3.2, 4.5, 4.6, 5.1 – 5.3	The GS registration date of the project activity is 26 January 2011, which is confirmed by GS. Therefore, the indicated sustainability monitoring period (15/09/2010 – 31/08/2012) is in compliance with the requirement in T.1.2.6 of GS Toolkit.	OK. The GS registration date of the project is confirmed as 26/01/2011 from the direct communication between verification team and the GS officer. Therefore, it is confirmed the indicated sustainability monitoring period is in compliance with T.1.2.6 of the Toolkit. CL01 is therefore closed.
2.	✓	CL02 It is reported by the PP that they are allowed to apply the results from the survey done on 28/06/2013 as the sustainability monitoring data for the indicated sustainability monitoring period. The PP is requested to clarify whether it is agreed by the GSF for such arrangement.	2.1 – 2.3, 3.1, 4.5, 4.6	Since the project was finally registered in 2013, GS allows pp to apply the monitoring results from the survey done from 28/06/2013 to 29/06/2013 as the sustainability monitoring data for the indicated sustainability monitoring period. This is confirmed by Ms. Luo Qun from GS.	OK. It is confirmed by the GS officer that the first monitoring survey can cover the monitoring period. Therefore, the sustainability monitoring data is confirmed to be valid. CL02 is therefore closed.
3.	✓	CL03 Regarding to the reported sustainability monitoring parameters, please respond to the followings:	4.3.1, 4.3.2, 4.4.2, 4.5	1. A) The no. of installed solar cooker is 17,000. The sales contract submitted to DOE can prove it. B) “4 hours” is daily usage time, while the reported value (i.e.	1. A) OK. It is required by the GS Passport to report the installed solar cooker, the sales contract of all the households have been verified according to the CDM verification report. 17,000 units

		<p>1. Access to affordable and clean energy services: A.) The reported no. of installed solar cooker seems to be the operational solar cooker during the 1st CDM periodic monitoring period. Please confirm the reported no. of installed solar cooker for this SD indicator. B.) According to the registered GS Passport, the “Future target for parameter” of solar cooker usage time is 4 hours. Please clarify whether the reported value (i.e. 127.08) is reasonable.</p> <p>2. Human and institutional capacity: The SMR does not clearly describe how the training record was monitored, please further clarify.</p> <p>3. Livelihood of the poor: The SMR does not clearly describe how the sampling was done for the survey conducted on 28/06/2013. Please further clarify.</p> <p>4. Please indicate the scoring of each monitored sustainability indicator in the sustainability monitoring report.</p>	<p>127.08) is monthly usage time. Divide 127.08 by 30, we’ll get 4.236 hours for daily value, which is very close to the estimated value (4 hours) in the registered GS Passport. The difference between the values is within a reasonable range.</p> <p>2. Relative materials about training were shown to DOE during onsite verification. The project owner has recorded the training by photos, which were shown to DOE. The statement about the training from local government will be submitted to DOE.</p> <p>3. The solar cooker users were randomly selected by the monitoring team onsite. The monitoring team went to the townships where the project is located and randomly visited 30 households for the survey. Further description about the sampling is added in the SMR.</p> <p>4. The scoring of each monitored indicator and the conclusion for this SMP is added in the SMR.</p>	<p>of solar cookers were installed. B) OK. The clarification is clear and accepted. The SMR is also revised as per the response. The difference (i.e. 6%) between the estimated value and the monitored value is considered within a reasonable variation range.</p> <p>2. OK. The statement of training issued by HRES was reviewed. It is confirmed that trainings to the users was done appropriately. And the procedures for recording the training are added in the MR which is consistent with the findings from the interview with the monitoring personnel and the officers from HRES.</p> <p>3. OK. The revised SMR indicates that “the monitoring team went to the townships where the project is located and randomly visited 30 users to ask them all questions on the questionnaires”. The verification team has confirmed the same from the officers of HRES who has taken part in the survey. The survey method is considered appropriate and in compliance with the Passport.</p> <p>4. OK. The scorings are now indicated in the SMR. The verification team considers the scoring are reasonable and also substantiated with evidences. A</p>
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						<p>conclusion for the monitoring results of the indicated sustainable monitoring period is added at the end of the SMR. The verification team concludes that all the monitored sustainability indicators are scored positively.</p> <p>Based on the above assessments, the reporting of the monitored sustainability indicators are confirmed appropriate. CL03 is therefore closed.</p>
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Table 3: List of forward action requests (FARs)

FAR number	Reference	Summary of project owner response	Verification team conclusion
<p><u>FAR2</u> Given the nature of later registration under GS, the deviation of monitoring frequency of SD parameters for this particular monitoring period was allowed. The PP shall implement SD monitoring according to SD Monitoring Plan in the future.</p>	<p>Comment 1 of GS Issuance Review Form /18/</p>	<p>In the following monitoring periods, the monitoring of SD parameters will be implemented in accordance with SD Monitoring Plan in the registered Passport.</p>	<p>As per the PP’s response, the verification team considers the SD monitoring will be implemented in accordance with the registered monitoring plan in the future. This will be checked in the next verification.</p>

Appendix B

Certification Statement
to the Verification Report 01 996 9105053901-1st VE

Certification statement

TUV Rheinland (China) Ltd., the DOE, has performed the verification of the registered CDM project activity (UNFCCC Project 3520, GS Ref. No: 710), “Federal Intertrade Haiyuan Solar Cooker Project” in P.R. China. The project activity is designed to reduce GHG emissions by capturing solar energy, which replaces the coal consumption for the same provision of thermal energy demand for cooking in the absence of project activity.

The project participants are responsible for the monitoring in accordance with the GHG and sustainability monitoring plans and the reporting of GHG emission reductions and contribution of sustainable development from the project activity. A total of 64,738tCO₂e CERs were issued under the 1st CDM periodic verification. Since 2% of the CER was deducted for the CDM Adaptation Fund, it is confirmed that 63,443tCO₂e of GS CER is resulted. It is DOE’s responsibility to express an independent sustainability verification statement on the reported GS CERs from the project activity. The DOE does not express any opinion on the selected baseline scenario or on the validated and registered PDD.

The verification was performed to identify the compliance of the project activity with implementation and monitoring requirements, and to verify the actual amount of achieved GS CERs, through obtaining evidence and information on-site that included i) checking whether the provisions of the monitoring methodology and the monitoring plan were consistently and appropriately applied, ii) the collection of evidence supporting the reported data and iii) emission reductions that are claimed is free from material errors, omissions or misstatements.

The verification is based on:

- Registered PDD version 12, dated 08/12/2012;
- Registered GS Passport version 8, dated 10/05/2013;
- Registered sustainability validation report version 01.5, dated 10/05/2013
- Registered CDM validation report version 01.2, dated 11/03/2010
- Registered local stakeholder consultation report, dated 25/08/2009
- Approved monitoring methodology “Thermal energy production with or without electricity” AMS-IC version 14
- Approved CDM monitoring report (1st periodic verification) version 3.1, dated 09/12/2012
- Approved CDM Verification Report (1st periodic verification) version 01.2, 09/12/2012
- Final sustainability monitoring report version 3.0, dated 29/09/2013.

This statement covers verification period of 716 days between 15/09/2010 and 31/08/2012.

The DOE has raised 03 clarification requests, all of which have been successfully resolved by PPs.

There is a FAR2 raised in the course of GS Issuance Review Stage. It has been reported in this verification report.

The DOE considers necessary to give reasonable assurance that reported GS CERs were calculated correctly on the basis of the approved baseline and monitoring methodology and the monitoring plans contained in the registered PDD and registered Passport are fairly stated.

The DOE, hereby certifies that the project activity, achieved GS CERs by sources of GHG equal to 63,443 tCO₂ equivalent and all monitoring requirements have been fulfilled.

The DOE states that the claimed GS CERs are free from material errors, omissions and misstatements with a reasonable level of assurance.

2013-10-10

Date



Mr. Henri Phan
DOE Manager
TUV Rheinland (China) Ltd.

2013-10-10

Date

Zhiang Tang

Name: Walter Tang
Technical Reviewer
TUV Rheinland China Ltd.

2013-10-09

Date



Name: Ginger Jiang
Team Leader
TUV Rheinland Hong Kong Ltd.

Appendix C

CERTIFICATES OF COMPETENCE

Qualification

Jiang, Ginger /

Emission Trading

United Nations Framework Convention on Climate Change

Auditor No. :
(AuditorenRegNr)

Appointed:
(Zugelassen)

ja

Qualification Level: Lead Auditor
(Qualifikationsstufe)

External:
(Externer)

ja

Add. reviewer: yes
(Zusätzlicher Prüfer)

EAC Scopes:
(EAC Branchen)

CDM 01 - Energy industries (renewable - / non-renewable sources)

Add. qualification :
(zus. Qualifikation)

First Appointment:
(Erstberufung)

12/04/2011

Valid to:
(Gültig bis)

12/03/2014

Remarks:

TA 1.2

Languages:

Chinese
English

Experience Exchange

Date

Location

Remarks

Accreditation(s)

Monitoring

Latest Monitoring:
(letzte Beurteilung)

Next
Monitoring:
(nächste
Beurteilung)

Remarks:

History of scope allocation

Date: 2011-12-22
Change: EAC CDM added
By: Manfred Brinkmann
Reason: Valid for TA 1.2

History

Created:	10/27/2011 04:39:51 PM	Ginger Jiang/Hk/Chn/TUV
Modified:	12/10/2012 04:36:02 PM	Ginger Jiang/Hk/Chn/TUV
	10/27/2011 04:40:12 PM	

Export to ICMS

Last Export:

Qualification

Chan, Timothy /

Emission Trading United Nations Framework Convention on Climate Change

Auditor No. :
(AuditorenRegNr)

Appointed:
(Zugelassen)

ja

Qualification Level: Auditor
(Qualifikationsstufe)

External:
(Externer)

ja

Add. reviewer: yes
(Zusätzlicher Prüfer)

EAC Scopes:
(EAC Branchen)

CDM 13 - Waste handling and disposal
CDM 02 - Energy distribution
CDM 01 - Energy industries (renewable - / non-renewable sources)

Add. qualification :
(zus. Qualifikation)

First Appointment:
(Erstberufung)

03/20/2012

Valid to:
(Gültig bis)

03/19/2015

Remarks:

TA 1.2, TA 2.2 , TA 13.1

Languages:

Cantonese
Chinese
English

Experience Exchange

Date

Location

Remarks

Accreditation(s)

Monitoring

Latest Monitoring:
(letzte Beurteilung)

Next
Monitoring:
(nächste
Beurteilung)

Remarks:

[View / Edit Monitoring](#)

History of scope allocation

Date: 2012-10-08
Change: EAC CDM added
By: Praveen Urs
Reason:

Date: 2012-03-20
Change: EAC CDM added
By: Praveen Urs
Reason:

Date: 2012-03-20
Change: EAC CDM added
By: Praveen Urs
Reason:

History

Created:	05/19/2011 12:55:01 PM	Timothy Chan/Hk/Chn/TUV
Modified:	10/08/2012 12:05:43 PM	Praveen Urs/Chn/TUV
	10/08/2012 12:05:12 PM	Praveen Urs/Chn/TUV
	09/28/2012 12:23:05 PM	Praveen Urs/Chn/TUV
	03/20/2012 05:16:31 PM	
	05/19/2011 12:55:43 PM	

Export to ICMS

Last Export:

Qualification

Tang, Walter /

Emission Trading United Nations Framework Convention on Climate Change

Auditor No. :
(AuditorenRegNr)

Appointed:
(Zugelassen)

ja

Qualification Level: Lead Auditor
(Qualifikationsstufe)

External:
(Externer)

ja

Add. reviewer: yes
(Zusätzlicher Prüfer)

EAC Scopes:
(EAC Branchen)

CDM 01 - Energy industries (renewable - / non-renewable sources)
CDM 02 - Energy distribution
CDM 03 - Energy demand
CDM 13 - Waste handling and disposal
CDM 04 - Manufacturing industries

Add. qualification :
(zus. Qualifikation)

First Appointment:
(Erstberufung)

10/11/2011

Valid to:
(Gültig bis)

09/11/2015

Remarks:

Appointed as Technical Reviewer for TA 1.1, 1.2, 2.1, 2.2, 3.1 Direct work experience. TA 4.3, 4.5, 13.1 based on Annex D para 9 of the Accreditation Standard

Languages:

Chinese simplified
English

Experience Exchange

Date

Location

Remarks

Accreditation(s)

Monitoring

Latest Monitoring:
(letzte Beurteilung)

Next
Monitoring:

(nächste
Beurteilung)

Remarks:

History of scope allocation

Date: 2012-02-13
Change: EAC CDM added
By: Praveen Urs
Reason:

Date: 2012-02-13
Change: EAC CDM, CDM, CDM, CDM added
By: Praveen Urs
Reason:

History

Created:	12/06/2011 05:00:51 PM	Walter Tang/Chn/TUV
Modified:	07/06/2012 04:47:48 PM	Praveen Urs/Chn/TUV
	07/02/2012 03:08:57 PM	Praveen Urs/Chn/TUV
	07/02/2012 03:08:48 PM	Praveen Urs/Chn/TUV
	05/15/2012 03:30:46 PM	
	02/13/2012 08:00:10 PM	
	12/06/2011 05:01:30 PM	

Export to ICMS

Last Export: