CTI	**Verification and certification report for GS4GG project activities** **(Gold Standard for the Global Goals)**
Complete this form in accordance with the instructions attached at the end of this form	
VERICATION AND CERTIFICATION REPORT	
Title of the project activity	Nanyang Danjiang River Solar Cooker Project Phase I
Reference number of the project activity	GS1378
Version number of the verification and certification report	03
Completion date of the verification and certification report	15/10/2021
Monitoring period number and duration of this monitoring period	MP number: 6th MP dates: 01/05/2020 to 31/05/2021 (both days included)
Version number of monitoring report to which this report applies	03
Crediting period of the project activity corresponding to this monitoring period	02/05/2012 to 01/05/2022 (both days included)
Project participant(s)	Sirreon Technology & Development (Beijing) Co., Ltd (Project Owner) China Carbon N.V (GS CER Buyer)
Host Party	People's Republic of China
Activity Requirements applied	☒ Community Services Activities ☐ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A
Methodology (ies) applied and version number	AMS-I.C "Thermal energy production with or without electricity" (Version 19)
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A
SDG Contributions targeted (as per approved PDD)	Goal 3: Good health and well-being Goal 7: Affordable and Clean Energy Goal 8: Decent work and economic growth Goal 13: Climate Action
Total amount of certified SDG impact (as	SDG 3 Good health and well-being

per approved methodology) achieved in this monitoring period	

Date	Measure	Age	Mean Averted
01/05/2020 -31/12/2020	Averted DALYs	Child	520
	Averted Deaths	Child	6
	Averted DALYs	Adult	15,167
	Averted Deaths	Adult	837
01/01/2021-31/05/2021	Averted DALYs	Child	520
	Averted Deaths	Child	6
	Averted DALYs	Adult	15,167
	Averted Deaths	Adult	837
01/05/2020-31/05/2021	Averted DALYs	Child	520
	Averted Deaths	Child	6
	Averted DALYs	Adult	15,167
	Averted Deaths	Adult	837

SDG 7 -

From 01/05/2020 to 31/12/2020, the increased number of households using clean energy for cooking and boiling water after the implementation of this project is: 43,200.

From 01/01/2021 to 31/05/2021, the increased number of households using clean energy for cooking and boiling water after the implementation of this project is: 43,200.

In the 6th monitoring period from 01/05/2020 to 31/05/2021, the increased number of households using clean energy for cooking and boiling water after the implementation of this project is: 43,200.

SDG 8 –

From 01/05/2020 to 31/12/2020, 30 jobs for local people were generated and 16 female employees included. The salary of employees in project region were 3,800 CNY/Month, and the salary for men and women was the same.

From 01/01/2021 to 31/05/2021, 30 jobs for local people were generated and 16 female employees included. The salary of employees in project region were 3,800 CNY/Month, and the salary for men and women was the same.

In the 6th monitoring period from 01/05/2020 to 31/05/2021, 30 jobs for local people were generated and 16 female employees included. The salary of employees in project region were 3,800 CNY/Month, and the salary for men and women was the same.

SDG 13 – GHG emission Reductions (GS CER)

	01/05/2020-31/12/2020 : 47,214 tCO_2e 01/01/2021-31/05/2021 : 20,148 tCO_2e[1] Total 6th monitoring period from 01/05/2020 to 31/05/2021: 67,362 tCO_2e
Name of VVB	VVB Name: Shenzhen CTI International Certification Co., Ltd (CTI)
Name, position and signature of the approver of the verification and certification report	 Wang Guolian Technical Reviewer/Approver

[1] The request of issuance of CERs of 01/01/2021-31/05/2021 were recorded as 'provisional' which is in accordance with the temporary measures for CDM processes related to the period from 1 January 2021 agreed by the CDM Executive Board at its 108th meeting and pending guidance from the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol at its sixteenth session. So, the CERs of 01/01/2021-31/05/2021 have not issued by CDM. For the CERs has not been issued for 2021, PP temporary does not make the request for GS labelling.

SECTION A. Executive summary

The purpose of the project activity is to provide access to clean and affordable energy to the rural households in China. This project activity involves the distribution and installation of 48,000 sets of solar cookers for rural households. The project activity involves dissemination of solar cooker in Xichuan County, Henan Province, China. The total rated installed capacity of the project activity is 37.128 MW_{th}.

The project activity enables rural households to efficiently substitute fossil fuel used in daily cooking and water boiling by solar energy and therewith avoid CO_2 emission that would have been generated by fossil fuel consumption, finally provides the affordable and clean energy to rural households in China.

The Project (Project ID GS1378) has been registered as a CDM project on 02/05/2012 (UNFCCC Reference Number 6125). The first solar cooker equipment contract was signed on 28/05/2011 which is verified via checking the solar cookers sales contract/11/ and the proposed project started full operation on 01/08/2011. This was verified via checking the commissioning confirmation/10/ against the previous CDM verification report/5/.

The estimated emission reduction from the project is 90,204 tCO_2e per year during the fixed 10-year crediting period and the Certified emissions reduction for the current monitoring period from 01/05/2020 to 31/05/2021 is 67,362 tCO_2e/2/.

Scope of Verification

This verification is a periodic independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the VVB. The verification addresses the implementation and operation of the GS PA and tests the data and assertions set out in the monitoring report based on the following:

(i) The registered CDM PDD/3/
(ii) The registered SDG monitoring plan in the GS4GG Transition Annex of this project/8/
(iii) The approved methodology mentioned in the PDD, AMS-I.C “Thermal energy production with or without electricity” (Version 19)/36/
(iv) the Gold Standard for the Global Goals Principles and Requirements/41/,
(v) the Gold Standard for the Global Goals Safeguarding Principles & Requirements/42/,
(vi) the Gold Standard for the Global Goals Community Services Activity Requirements/43/,
(vii) CDM Validation and Verification Standard (VVS) for project activity, version 2.0/48/
(viii) Validation and Verification Body requirements, Product requirements and references relevant to the project activity’s reported emission reductions

The verification has considered both quantitative and qualitative aspects on stated/reported emission reductions. The monitoring report (all versions) and corresponding supporting documentation was assessed in accordance with the rules defined by UNFCCC, as appropriate to the PA. The verification is not meant to provide any consulting or recommendations to the PP/others. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the monitoring activities.

Verification process

The verification has been performed as described in the Gold Standard for the Global Goals Principles and Requirements/41/, CDM validation and verification standard for programme of activities (version 02.0)/48/

a) Desk review of the GS MR (version 01 dated 16/06/2021)/1/ and the relevant documents
b) On-site assessment (02/07/2021~05/07/2021)
c) Issuance of draft verification report & verification protocol
d) Desk review of the revised MR and related documents
e) Resolution of the raised CAR

f) Issuance of the final verification report
g) Independent technical review of the draft verification report and final/revised documentation (e.g., Monitoring Report, corresponding ER sheet and evidences)
h) Reporting and closure of TR comments/findings and final approval for the decision made
i) Issuance of final verification report to contracted PP (or authorized representatives) and submission of request for issuance, as appropriate.

Conclusion

CTI has performed the verification of the GS PA "Nanyang Danjiang River Solar Cooker Project Phase I" having GS Ref. Number GS1378 for the monitoring period 01/05/2020 to 31/05/2021. The verified emission reductions amount to 67,362 tCO_2e in the 6th monitoring period.

The technical parameters of the solar cookers are consistent with the registered PDD, also consistent with the solar cookers sales contract/11/ and the testing report of focus type solar cookers/13/.

In CTI's opinion, the GHG emission reductions reported for the project in the GS4GG 6th monitoring report are fairly stated. It is confirmed that each SDG Impacts were calculated correctly on the basis of the approved monitoring methodologies AMS-I.C. ver. 19/36/, the monitoring plan contained in the PDD (Version 07 dated 16/04/2012)/3/ and the GS4GG SDG monitoring plan in Transition Annex/8/.

CTI confirms that each SDG Impacts are calculated without material misstatements. Based on the evidence and information that are considered necessary to guarantee that each SDG Impacts are appropriately calculated, CTI is able to certify that each SDG Impacts from the project **"Nanyang Danjiang River Solar Cooker Project Phase I"** during the indicated monitoring period.

SECTION B. Verification team, technical reviewer and approver

B.1. Verification team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Validation findings
1.	Team Leader & Verifier	IR	Du	Wenjun	CTI	√	√	√	√

B.2. Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)
1.	Technical reviewer/ Approver	IR	Wang	Guolian	CTI

SECTION C. Application of materiality

C.1. Consideration of materiality in planning the verification

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Human error in the quantification of emissions	Low	Human error is likely to occur if personnel are unfamiliar with, or not well trained regarding, emissions processes or data recording	Depending on the monitoring period being verified, conduct increased verifying during the months when there is a greater likelihood of errors and issues with data quality control due to project participants' leave schedules
2.	Undue reliance on a poorly designed information system, which may have few effective quality controls	Low	Use of spreadsheets without adequate controls related to data changes/updates, version tracking, traceability, security	Depending on how data is generated, processed, and reported, place greater emphasis on verifying data captured and processed manually and/or in spreadsheets versus those that are generated from an automated system
3.	Omissions and misstatements in data transfer from hand written notes into digital Excel ER spreadsheet	Medium	Ineffective quality control of data transfer due to unclear QA/QC procedure	Check QM procedure/manual. PP may demonstrate how to transfer data and how this is crosschecked. Conduct interview with related personnel whether procedure is actually conducted but not adequately described.
4.	Sample	Medium	Sample size is not suitable; or the surveyed end users are not random	Cross-check the procedure to identify the sample size against the sample guideline/24/ and sample standard/25/ for t_i, and confirm the sample size is calculated correctly, and chose 38 in a standard approach, compared 626(313*2) (calculated result of sample size). Furthermore, the relative error of the 626 sample results is lower and the statistical quality is sufficient. Cross-check the procedure to identify the sample size against the "Gold Standard Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices"/44/ for $U_{p,y}$, and confirm the sample size is calculated correctly, and chose 38 in a standard approach, compared 100 (calculated result of sample size). Furthermore, the relative error of the 100 sample results is lower and the statistical quality is sufficient. CTI conducted a random sample following the sample standard during site-visit period, visited total 76 end users who are partial sourced from the sample

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
				conducted by PP. Based on the result of acceptance sampling, the monitoring records are deemed acceptable.

On the basis of the risk analysis the verification has been planned. A detailed audit/verification plan has been prepared and submitted to the project participant(s) in due time before the site visit.

C.2. Consideration of materiality in conducting the verification

The errors identified in the project are below the threshold limit of materiality and hence not material. The GHG emission reductions are calculated without material misstatements.

SECTION D. Means of verification

D.1. Desk/document review

Desk review of all documents provided by PP and publicly available documents relevant for the verification including monitoring plan, monitoring report, monitoring methodology, project design document, applicable tools in particular attention to the frequency of measurements, QA/QC procedures and other relevant documents was conducted by CTI.

The main documents are listed below:

(i) the GS4GG Monitoring Report Version 01 dated 16/06/2021/1/
(ii) the last revision of the PDD including the monitoring plan/3/,
(iii) the registered SDG monitoring plan in the GS4GG Transition Annex of this project/8/
(iv) the last revision of the CDM validation report/4/,
(v) the last revision of the GS validation report/6/,
(vi) the documentation of previous CDM verifications/5/,
(vii) the documentation of previous GS verifications/7/,
(viii) the emission reduction calculation spreadsheet/2/.

Other supporting documents, such as publicly available information on the UNFCCC website and SustainCert APP and background information were also reviewed.

The list of documents reviewed during the verification is provided under Appendix 3 of this report.

D.2. On-site inspection

Duration of on-site inspection: 02/07/2021 - 05/07/2021				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
1.	Opening meeting ➢ Round of introduction ➢ Scope of Audit ➢ Introduction of Verification Process ➢ confirming focus area for the audit ➢ Final confirmation of audit plan ➢ Attendance Register	No.109 of Zhongzhou Road, Nanyang City Henan Province, P. R. China	02/07/2021	Wenjun Du
2	On-site inspection ➢ Visit randomly selected end users to conduct physical inspection to the household solar cookers in order to verify the monitoring information presented in the monitoring report ➢ Verify whether the project implementation is in line with the description in the registered PDD ➢ Interview with monitoring staff to verify how they manage the end users in project and how to collect the monitoring data by sampling method ➢ Interview with end users, getting relevant information by filling questionnaires to compare with the monitoring data in monitoring report Interview with PP Representative and Local end Users ➢ The local development of this industry and relevant policy ➢ Technology utilized, Technical equipment and operation	Jingziguan, Siwan, Xihuang, Maotang, Dashiqiao, Shangji and Jinhe town, Xichuan County, Nanyang City, Henan Province, P. R. China	02/07/2021-05/07/2021	Wenjun Du

	➢ Starting date of project and crediting period ➢ Management Procedure and Method taken by PP ➢ Involved personnel and responsibilities ➢ Emission reduction, Monitoring Plan and implementation of project for this monitoring period ➢ Sampling Plan and implementation of taken by PP for this monitoring period ➢ Training and detailed procedures ➢ Monitoring Data collection and archive procedure and method			
3	Documents check (As provided in the Appendix 3)	No.109 of Zhongzhou Road, Nanyang City Henan Province, P. R. China	05/07/2021	Wenjun Du
4	Finding Summary	No.109 of Zhongzhou Road, Nanyang City Henan Province, P. R. China	05/07/2021	Wenjun Du
5	Close Meeting ➢ Presenting audit findings ➢ Introduce following procedures after site visit	No.109 of Zhongzhou Road, Nanyang City Henan Province, P. R. China	05/07/2021	Wenjun Du

D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Su	Fanglei	Sirreon Technology & Development (Beijing) Co., Ltd / General Manager	02/07/2021-05/07/2021	- General aspects of the project - Changes since validation / previous verifications - Project implementation status - Quality management system - Involved personnel and responsibilities - Training and practice of the monitoring personnel - Implementation of the monitoring plan - Monitoring data management - Data uncertainty and residual risks - Procedural aspects of the verification - Maintenance - Environmental aspects	Wenjun Du
2.	Yao	Zheng	Sirreon Technology & Development (Beijing) Co., Ltd / CDM Project Manager	02/07/2021-05/07/2021	- General aspects of the project - Changes since validation / previous verifications - Project implementation status - Quality management system - Involved personnel and	Wenjun Du

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
					responsibilities - Training and practice of the monitoring personnel - Implementation of the monitoring plan - Monitoring data management - Data uncertainty and residual risks - Procedural aspects of the verification - Maintenance - Environmental aspects	
3.	Ji	Ming	Sirreon Technology & Development (Beijing) Co., Ltd / Monitoring Manager	02/07/2021-05/07/2021	- Project implementation status - Quality management system - Involved personnel and responsibilities - Training and practice of the monitoring personnel - Implementation of the monitoring plan - Monitoring data management - Data uncertainty and residual risks - Procedural aspects of the verification - Maintenance	Wenjun Du
4.	Zhang	Yixiang	Sirreon Technology & Development (Beijing) Co., Ltd / Monitoring Data Surveyor	02/07/2021	- Monitoring data survey - Monitoring data collection - Monitoring data record - Monitoring data verify - Monitoring data check - Monitoring data management	Wenjun Du
5.	Ding	Yunxi		02/07/2021		
6.	Feng	Yanbo	Sirreon Technology & Development (Beijing) Co., Ltd / Monitoring Data Recorder	02/07/2021		
7.	Zhang	Bang		02/07/2021		
8.	He	Bang		02/07/2021		
9.	Gan	Fuquan		02/07/2021		
10.	Pan	Qinyu	Sirreon Technology & Development (Beijing) Co., Ltd / Monitoring Data Verifier	02/07/2021		
11.	Kang	Hua		02/07/2021		
12.	Xu	Zhi		02/07/2021		
13.	Shen	Wenqiong	Local women's federation/Staff	02/07/2021	- local stakeholder comments - Benefit to Woman - Environmental Impacts	Wenjun Du
14.	Cao	Lei	Bureau of Ecology and Environment in Nanyang City	02/07/2021		Wenjun Du
15.	Liang	Yi	Liying	03/07/2021	- Project implementation	Wenjun Du

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
			Village/Solar cooker users (t_i sample)		- Project operation - Data collection procedure	
16.	Duan	Nanli	Shicaogou Village/Solar cooker users (t_i sample)	04/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
17.	Xu	Qinjin	Shimen Village/Solar cooker users (t_i sample)	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
18.	Han	Zhi	Dapa village/Solar cooker users (t_i sample)	04/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
19.	Luo	Taohe	Shimen Village/Solar cooker users (t_i sample)	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
20.	Zou	Shuning	Beijie Village/Solar cooker users	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
21.	Jiang	Esha	Weicun Village/Solar cooker users (t_i sample)	04/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
22.	Ma	Hao	Fengying Village/Solar cooker users (t_i sample)	05/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
23.	Shao	Pingjing	Longquanguan Village/Solar cooker users (t_i sample)	05/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
24.	Lian	Chenhong	Qinjiagou Village/Solar cooker users (t_i sample)	05/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
25.	Ji	Hanghang	Liulin Village/Solar cooker users (t_i sample)	04/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
26.	Ji	Beishan	Xinjian Village/Solar cooker users (t_i sample)	04/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
27.	Qian	Qun	Longgang Village/Solar cooker users (t_i sample)	02/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
28.	Zhang	Liqiong	Hebei Village/Solar cooker users (t_i sample)	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
29.	Yin	Jiedong	Maozhuang Village/Solar cooker users (t_i sample)	02/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
30.	Fang	Ying	Qianwan Village/Solar cooker users (t_i sample)	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
31.	Cai	Min	Qianwan Village/Solar cooker users (t_i sample)	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
32.	Gan	Yan	Luozigou Village/Solar cooker users (t_i sample)	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
33.	Xi	Weiliang	Maotang Village/Solar cooker users (t_i sample)	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
34.	Cheng	Long	Dianzi Village/Solar cooker users (t_i sample)	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
35.	Pi	Juan	Gaogou Village/Solar cooker users (t_i sample)	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
36.	Bian	Shan	Zhifanggou Village/Solar cooker users (t_i sample)	04/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
37.	Huang	DiSu	Jianggou Village/Solar cooker users (t_i sample)	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
38.	Yu	Jian	Zhujiaying Village/Solar cooker users (t_i sample)	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
39.	Fan	Xin	Qiaogou Village/Solar cooker users (t_i sample)	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
40.	Xue	Mei	Henggou Village/Solar cooker users (t_i sample)	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
41.	Hu	Zhi	Liujiaquan Village/Solar cooker users (t_i sample)	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
42.	Lei	Meimeng	Jingbaling Village/Solar cooker users (t_i sample)	04/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
43.	Ming	Luli	Maoping Village/Solar cooker users (t_i sample)	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
44.	Fu	Qing	Liujiaquan Village/Solar	03/07/2021	- Project implementation - Project operation	Wenjun Du

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
			cooker users (t_i sample)		- Data collection procedure	
45.	Deng	An	Guojiaqu Village/Solar cooker users (t_i sample)	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
46.	Ying	Huanbing	Jiawa Village/Solar cooker users (t_i sample)	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
47.	Mo	Biaoma	Jinhui Community /Solar cooker users (t_i sample)	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
48.	Wang	Huixiang	Fenghua Village/Solar cooker users (t_i sample)	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
49.	Ji	Shimao	Wangling Village/Solar cooker users (t_i sample)	04/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
50.	Fu	Xinchao	Guangou Village/Solar cooker users (t_i sample)	04/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
51.	Yu	Shanxia	Jinhui Community /Solar cooker users (t_i sample)	04/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
52.	Lei	Dong	Xiawu Village/Solar cooker users (t_i sample)	03/07/2021	- Project implementation - Project operation - Data collection procedure	Wenjun Du
53.	Han	Tao	Sunjiawan Village/Solar cooker users ($U_{p,y}$ sample)	02/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
54.	Yin	Yingchun	Shijia Village/Solar cooker users ($U_{p,y}$ sample)	02/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
55.	Wan	Namei	Shangzhuang Village/Solar cooker users ($U_{p,y}$ sample)	02/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
56.	Jiang	Xiu	Shijia Village/Solar cooker users ($U_{p,y}$ sample)	02/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
57.	Xie	Yuanlan	Shangmeichi Village/Solar cooker users ($U_{p,y}$ sample)	02/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
58.	Zheng	Junhui	Beijie Village/Solar	02/07/2021	- Usage time - Users Training	Wenjun Du

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
			cooker users ($U_{p,y}$ sample)		- Follow-up interview	
59.	Shan	Gang	Sanquangou Village/Solar cooker users ($U_{p,y}$ sample)	03/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
60.	Ding	Zhiyu	Yang Ao Village/Solar cooker users ($U_{p,y}$ sample)	03/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
61.	Ming	Ruidan	Jiagou Village/Solar cooker users ($U_{p,y}$ sample)	03/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
62.	Shen	Zhi	Luogang Village/Solar cooker users ($U_{p,y}$ sample)	04/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
63.	Xiao	Guishao	Dujiayao Village/Solar cooker users ($U_{p,y}$ sample)	04/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
64.	Yu	Ya	Gaowan Village/Solar cooker users ($U_{p,y}$ sample)	04/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
65.	Hao	Ya	Mujiagou Village/Solar cooker users ($U_{p,y}$ sample)	05/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
66.	Hu	Wanhui	Longgang Village/Solar cooker users ($U_{p,y}$ sample)	02/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
67.	Hua	Taotie	Yawu Village/Solar cooker users ($U_{p,y}$ sample)	02/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
68.	Hua	Hanhui	Qikeshu Village/Solar cooker users ($U_{p,y}$ sample)	02/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
69.	Li	Xin	Longgang Village/Solar cooker users ($U_{p,y}$ sample)	03/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
70.	Li	Xiaxin	Qikeshu Village/Solar cooker users ($U_{p,y}$ sample)	03/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
71.	Qian	Tao	Jianggou Village/Solar cooker users ($U_{p,y}$ sample)	03/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
72.	Le	Keguang	Gaogou Village/Solar cooker users ($U_{p,y}$ sample)	04/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
73.	Gu	Juhan	Zhifanggou Village/Solar cooker users ($U_{p,y}$ sample)	04/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
74.	Fu	Keyun	Baishu Village/Solar cooker users ($U_{p,y}$ sample)	03/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
75.	Chang	Yan	Laogou Village/Solar cooker users ($U_{p,y}$ sample)	04/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
76.	Liang	Fangcong	Shicaogou Village/Solar cooker users ($U_{p,y}$ sample)	04/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
77.	Xiao	Yi	Yanjiagou Village/Solar cooker users ($U_{p,y}$ sample)	05/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
78.	Shi	Bing	Shiyanhe Village/Solar cooker users ($U_{p,y}$ sample)	05/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
79.	Huang	Ying	Dongyuemiao Village/Solar cooker users ($U_{p,y}$ sample)	05/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
80.	Zhou	Qiong	Duantai Village/Solar cooker users ($U_{p,y}$ sample)	05/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
81.	Qu	Tianrong	Jiawa Village/Solar cooker users ($U_{p,y}$ sample)	02/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
82.	Chang	Ping	Dongfang Community /Solar cooker users ($U_{p,y}$ sample)	04/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
83.	Ge	Shun	Daping Village/Solar cooker users ($U_{p,y}$ sample)	04/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
84.	Huo	Zhijie	Shangsheng Community /Solar cooker users ($U_{p,y}$ sample)	04/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
85.	Jing	E'e	Laofungou Village/Solar cooker users ($U_{p,y}$ sample)	04/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
86.	Tao	Wu	Beigou Village/Solar cooker users ($U_{p,y}$ sample)	04/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
87.	Liu	Liangshi	Wangling Village/Solar cooker users ($U_{p,y}$ sample)	04/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
88.	Yu	Xinqing	Yuanjia Village/Solar cooker users ($U_{p,y}$ sample)	05/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
89.	Yan	Shanbo	Gongjing Village/Solar cooker users ($U_{p,y}$ sample)	04/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
90.	Yang	Binbao	Heishui Village/Solar cooker users ($U_{p,y}$ sample)	04/07/2021	- Usage time - Users Training - Follow-up interview	Wenjun Du
91.	Li	Mengnan	Profit Carbon (Shanghai) Environment Co., Ltd./ Consultant	02/07/2021-05/07/2021	- Monitoring data management - Monitoring data collection - Data uncertainty and residual risks - Monitoring report preparing - GHG emission reduction calculation	Wenjun Du

***The site visit was conducted in the Jingziguan Township, Siwan Township, Xihuang Township, Maotang Township, Dashiqiao Township, Shangji Township and Jinhe Township, Xichuan County, Nanyang City, Henan Province, China where the project located**

Type of Questions asked by the team members:

During the site visit, the verifier has randomly selected staffs, field surveyors from project implementer and end users from the PP monitoring survey samples as above table to confirm that the correctness of the project monitoring data and information and sampling method reported by the PP.

The questions asked were basically based on requirements of the GS4GG and MR description.

a. Questions asked to end users with parameter of t_i:

The households who attended the monitoring survey for monitoring the solar cooker using situations and determination of parameter t_i were asked the following questions;

1. General information of households
   a. Interviewee Name
   b. ID No.
   c. Age, Gender
   d. Household location
   e. Mobile No.
2. Solar Cooker using situation
   a. When did you use the solar cooker?
   b. Before using the solar cooker, did you participate in the solar cooker publicity, publicity and how to use training sessions, if yes, time is
   c. After using the solar cooker, did the distributor come to your home to check the use of the solar cooker? if yes, time is
   d. Solar cooker using frequency, boiling times, cooking times and total used time
   e. Do you think the use of solar cookers is affected by the season? if yes, which season less time

f. Do you think the solar cooker is cleaner than the old stove?
g. Do you think using a solar cooker saves money compared to using a stove?

Feedback Received for t_i through the Interview:

The feedback from Household interviewees are listed as below:

All the interviewees provided the general information of the households,

For the using of solar cookers, all the households confirmed they used the solar cookers commonly, all the households have provided the general information when they started using the solar cooker and the unique serial No. has been verified by cross-check the User information registration form/14/ and the Solar cookers usage agreements/15/.

All the households confirmed they have participated the solar cooker publicity and how to use training sessions, and they all confirmed that the distributor come to their home to do the follow up checking the use of the solar cooker.

All the households confirmed they use solar cookers very frequently and average time is from 2.6 to 4.8 hours.

All the households confirmed that the using of solar cooker is impacted by season reason and less in winter.

All the households confirmed that solar cooker is cleaner than the old stove without smoke and saves money.

b. Questions asked to end users with parameter of Usage Rate $U_{p,y}$:

The households who attended the monitoring survey for monitoring the solar cooker using situations and determination of parameter usage rate were asked the following questions,

1. General information of households
   a. Interviewee Name
   b. ID No.
   c. Age, Gender
   d. Household location
   e. Mobile No.
2. Solar Cooker using situation
   a. Are you the main user of the solar cooker at home?
   b. When did you start using the solar cooker?
   c. Before using the solar cooker, did you participate in the solar cooker publicity, publicity and how to use training sessions, if yes, time is
   d. After using the solar cooker, did the distributor come to your home to check the use of the solar cooker? if yes, time is
   e. Solar cooker using frequency, boiling times, cooking times and total used time
   f. Do you think the solar cooker is cleaner than the old stove?
   g. Do you think using a solar cooker saves money compared to using a stove?

Feedback Received through the Interview:

The feedback from Household interviewees are listed as below:

All the interviewees provided the general information of the households,

All the interviewees confirmed that they are the main users of the solar cooker at home,

All the households have provided the time for start using the solar cooker,

All the households confirmed they have participated the solar cooker publicity and how to use training sessions, and they all confirmed that the distributor come to their home to do the follow up checking the use of the solar cooker.

All the households confirmed they use solar cookers very frequently and average time is from 4 to 5 hours.

All the households confirmed that solar cooker is cleaner than the old stove without smoke and saves money as solar is no need to pay.

c. Questions asked to staffs

The staff representatives were asked the following questions:

a. General info of interviewee, name, gender, ID No. Age, Education, Location, Mobile, Position
b. When joined the company
c. How to obtain this job
d. What is the main work
e. What about the working condition
f. Salary level, if satisfied

Feedback Received through the Interview

All the staffs provided the general information, position, join time, join method, main work, all the staffs agreed that the working condition is well and satisfied with the salary level.

d. Questions asked to monitoring team members

The staff representatives were asked the following questions:

a. General info of interviewee, name, gender, ID No. Age, Education, Location, Mobile, Position
b. When joined the monitoring team
c. Which team do you belong to
d. What is the main work, do you know your target and purpose of the work
e. Do you have any working instruction manual and procedure documents
f. What did you monitor during the period of May 2020 to May 2021
g. Have you attended any training and when, content of the training
h. Please introduce how to use continuous monitoring equipment to monitor the operation time of the solar cooker
i. Whether your work is supervised by the employer
j. On the first day of your monitoring and investigation work, did the someone supervise and guide you on how to do the monitoring and investigation?

Feedback Received through the Interview

All the monitoring team members provided the general information, position, join time, which team, main work.

All the monitoring team members know their work and purpose and all they have instruction manual and attended the training for monitoring. And they all conducted the monitoring and data collection during May 2020 to May 2021, and all the members using the measurement device for monitoring the operation of the solar cookers, and their work were under the supervision of employer.

D.4. Sampling approach

PP Sampling Approach for t_i

The sampling design carried out by PP for this project is demonstrated as below:

As per registered CDM PDD/3/, the project activity applies simple random sampling for monitoring the monthly operating time of each solar cooker, t_i, and the sample size is 312.

Each district sample size is thus calculated and determined as following formula in line the "Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities", /39/:

$$n_i = \frac{g_i}{N} \times n$$

Where:

n_i is the sample size in the district;
g_i is the number of households in district given solar cooker;
N is the population total, which is 48,000;
n is sample size in the registered PDD, which is 312.

Thus, sample size each district is calculated in the table below:

District	Number of households (g_i)	Calculated sample size (n_i=g_i/48,000*312)	Actual sample size
Jingziguan	6,000	39	39
Siwan	6,000	39	39
Xihuang	8,000	52	52
Maotang	8,000	52	52
Dashiqiao	7,000	45.5	46
Shangji	7,000	45.5	46
Jinhe	6,000	39	39
Total	**48,000**	**312**	**313**

In the registered PDD, simple random sampling size is 312, however, based on the above calculation results, the sample size in district Dashiqiao and Shangji is 45.5. In the MR, the sample size in district Dashiqiao and Shangji is rounded up to 46. Thus 626 sampled solar cookers, 313 for each year respectively are surveyed. This is deemed conservative.

The sample is randomly selected within each district using excel at the beginning of each year following the operation start date of 01/08/2011 and deemed representative of the population.

The sample records/16/ have been provided to the verification team. No missing or damaged record is revealed by the verification team. Adequate reason is recorded along with the significantly high data as per the registered PDD/3/. The maintenance is also in place as per the registered PDD.

PP Sampling Approach for $U_{p,y}$

The sampling plan/25/ and monitoring survey records for usage rate/19/ are verified by the verification team, it is confirmed that the sample size determination for determine the parameter $U_{p,y}$ in the monitoring survey is in line with the GS requirement "Gold Standard Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices"/44/.

PP has employed stratified sampling method and random sample selection methodology to ensure the final sample selected for this parameter monitoring survey was representative. It is verified that the method is in line with GS requirement "Gold Standard Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices"/44/.

Monitoring parameter of $U_{p,y}$ was determined by conducting Usage Survey which is weighted based on drop off rates that are representative of the age distribution for project solar cookers in the total sales record. It is conducted on annually basis.

The usage survey has been conducted in May 2020 to May 2021 by monitoring team from PP.

For sampling survey as requested in the GS requirement "Gold Standard Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices"/44/, 100 end users of solar cooker have been selected and visited by monitoring team members during May 2020 to May 2021 which has been confirmed by checking the monitoring survey records for usage rate/19/.

Overall, 100 solar cookers with only one age (same age group, due to all 48,000 solar cookers had been completely distributed in May to July in 2011 and no more units will be added into the project with the progress of the project) were monitored. Random sampling approach has been applied for selection of samples. It is confirmed that the sample size fulfils the minimum sample size requirement of continuous use monitoring in the GS rule of Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices/44/.

All measurements and interviews in the usage survey have been conducted in person within the household, and questionnaire has also been used to collect responses from interviewees.

Above mentioned evidences were provided to the verification team during site verification. PP conducted the usage survey fulfilled with the level B. Good Practice Monitoring Requirements as requested in the "Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices (23/08/2017)"/44/. The assessment is listed as below stepwise,

a. Level A. Mandatory Monitoring Requirements

Step 1. Defining stove use and non-use

All measurements in the usage survey have been conducted in person within the household, the 100 samples were randomly divided into 2 groups, the 90 days monitoring activity of each sampling group was completed successively during the monitoring period.

Hence, it is verified that the stove use and non-use can be monitored and checked by records of 90 days monitoring of the 2 groups/19/ which have been conducted in 01/05/2020 and 01/08/2020 separately.

In conclusion, the 93% of the project solar cookers were in common use via the monitoring results. As the requirement of "Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices", the share of units in normal use shall be capped at 90%, hence, the final value of share of units in normal use is determined as 90%.

Step 2. Household Usage Survey

Usage Survey targeted 100 solar cookers with only one age (same age group, due to all 48,000 solar cookers had been completely distributed in May to July 2011) during this monitoring period. Hence, it is confirmed that the sample size for the usage survey meets the requirements of the applied methodology (at least 100 samples for project technologies). For each sub-request, the assessment is stated as below,

i. Kitchen observation

Pictures of the project solar cookers/22/ taken during the field survey by the monitoring team have been provided by PP. Through the pictures, the verifier confirmed that the solar cookers are in good condition and used in open kitchen.

ii. Interview with the primary cook

Samples of filled monitoring survey questionnaires/21/ and monitoring survey records for usage rate/19/ have been checked, the verifier verified that the Question one is directly asking if you are the primary user of solar cookers in the household, the surveyors have been trained to interview the primary cook who use the stove, the survey with the household should be stopped or delayed if not the right person. And via checking all the answers in the questionnaire samples, it is verified that the all interviewees were the primary user of the solar cookers in their households.

iii. Photos of the cooking area(s)

Pictures of the project solar cookers used in the kitchen of the households/22/ taken during the field survey by the surveyors have been provided by PP. Through the pictures, it is confirmed that the household allowed them to take photos in their open kitchens.

iv. GSP coordinates

Monitoring survey records for usage rate/19/ have been checked, it is verified that the GPS coordinates of the households surveyed have been recorded on the records by surveyors, and the photos of the project solar cookers/22/ surveyed have been taken during the field survey by the surveyors too, which is in line with the requirements in the guideline.

Step 3. Verification checks

The record of verification checks/23/ in an excel sheet has been provided to VVB, it is confirmed that the Data Verification Group from PP has conducted the verification checks by end of November 2020, after the conclusion of the data collection phase of the usage survey and prior to the verification by the VVB. Through the records, it is verified that PP has telephoned a randomly selected 10 surveyed households (account for 10% of total samples) and several questions were asked which is same to the questions in the questionnaires. Details of the households and their responses have been recorded for the checks. The record

of verification checks/23/ in an excel sheet has been cross-checked with filled monitoring survey questionnaires/21/, it is verified that the verification checks records are in line with the responses from the monitoring survey.

In conclusion, the project activity is in compliance with the Level A mandatory requirements.

b. Level B. Good Practice Monitoring Requirements

- Field team training and supervision:

Via checking the monitoring survey records/19/ and the monitoring manual/26/ and interview with the surveyor of the monitoring team, it is confirmed that the GS monitoring team has established by PP. Also through checking the training records including training presentation, surveyors' training photos and attendance lists/29/, it is verified that the two trainings have been provided to the field monitoring team on 16/01/2020 and 07/04/2021 separately.

Furthermore, via interview the surveyors during site visit, it is verified that the local team has traveled in all survey regions to conduct the interviews; and PP has supervised the field survey and conducted quality check on data collected during the visits.

- End-User Training and follow up visits & Awareness campaign:

Via checking the samples of End-user training records/30/ which were provided by PP, it is confirmed that the project owner has provided the end-user training on illustration on use and maintenance of the solar cookers, how to record the usage time, and sustainable development contributions of the project to conduct related awareness campaign.

Furthermore, via site interview with the PP, it is confirmed that they explained and demonstrated how to correctly and efficiently use the solar cookers when the solar cookers were distributed. And the users are trained to record the time of using the solar cookers per day which has been confirmed by checking the training records/30/.

Besides, via checking the Pictures of the project solar cookers checked by PP/22/, it is also verified that the PP has conducted follow up visits during this monitoring period.

The results show that 93% surveyed solar cookers were in normal use by the households during the monitoring period by questionnaire survey/21/ but capped as 90% as per the "Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices" (23/08/2017)/44/, and through questionnaire survey results for the number of days that units are not in use/21/, the average share of running time is calculated as 85.52%, thus the weighted usage rate is calculated as 76.97% (90% * 85.52%) which has been checked and confirmed in usage rate calculation sheet/20/ against the original questionnaires filled by sample households/21/ and the monitoring survey record/19/.

Therefore, it is concluded that based on the "Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices" (23/08/2017)/44/, the usage survey carried out fulfils the Level A. Mandatory and Level B. Good Practice Monitoring Requirements. Therefore, the final calculation result of 76.97% usage rates have been used for emission reduction calculation is confirmed as reasonable and correct.

Therefore, based on the Requirements and Guidelines, the usage rate of no higher than 90% as per Level B requirement which is 76.97% can be claimed for this monitoring period.

Sampling approaches during verification

1) Verifier's Action

Following "Sampling and Surveys for CDM Project Activities and Programme of Activities" version 08.0/38/, the verifier conducted the verification of sampling results with the following steps:

(a) Take a random sample of the project's sample records;

In order to determine the size of the sample for field/onsite check, the acceptable quality level (AQL), i.e. the proportion discrepancies between the PP sample records and the DOE sample records that are acceptable is determined as 0.5% and the proportion of discrepancies between the PP sample records and DOE sample records that are unacceptable (UQL) is determined as 10% according to "Sampling and Surveys for CDM Project Activities and Programme of Activities" version 08.0/38/.

The maximum errors associated with the determination indicated above should remain at levels indicated below as per "Sampling and Surveys for CDM Project Activities and Programme of Activities" /38/:

(1) A 10% chance that the DOE will wrongly reject the PPs records (producer's risk);

(2) A 10% chance that the DOE will wrongly accept the PPs records (consumer's risk).

With the AQL of 0.5%, the UQL of 10%, the producer's risk of 10% and the consumer's risk of 10%, the size of the acceptance sampling is determined as 38 and the acceptance number is determined as 1 according to Table 2 of "Sampling and Surveys for CDM Project Activities and Programme of Activities" /38/.

Take a random sample of the PPs sample records, i.e. the monthly operating time of solar cookers sampled by project participants/16/ and the onsite check of the 38 solar cookers sampled by the verifier. The original daily operating hour records of solar cookers for 38 samples selected by verification team/17/ and the monthly operating time of solar cookers sampled by project participants were cross checked by verification team too.

(b) Check the acceptability of the data for each record in the sample records based on the expertise;

The sample records, i.e. the monthly operating time of solar cookers sampled by project participants/16/ is found to be consistent with the original daily operating hour records of solar cookers for 38 samples selected by verification team/17/. Also, no discrepancy is found between the sample records (626 solar cookers, 313 for each year respectively) and the DOE sample records (38 solar cookers).

(c) Based on the number of records where is agreement, determine if the sample records meet the requirements.

As there are no discrepant records, i.e. the discrepant record is less than the acceptance number of 1, the sample records/16/ is accepted as per "Sampling and Surveys for CDM Project Activities and Programme of Activities" /38/.

2) Reliability Check

a. Mean value and standard deviations for strata

Table below summarize the verified results for mean monthly operation hour and standard deviations for each district:

Town / Month	Jingziguan		Siwan		Xihuang		Maotang		Dashiqiao		Shangji		Jinghe	
	Sample mean	Sample standard deviation	Sample mean	Sample standard deviation	Sample mean	Sample standard deviation	Sample mean	Sample standard deviation	Sample mean	Sample standard deviation	Sample mean	Sample standard deviation	Sample mean	Sample standard deviation
	m_i	SD_i	m_i	SD_i	m_i	SD_i	m_i	SD_i	m_i	SD_i	m_i	SD_i	m_i	SD_i
05/2020	133.00	14.7702	134.26	13.3036	130.65	14.7115	132.46	12.8787	132.41	14.7807	130.80	13.1312	134.77	11.9439
06/2020	114.13	6.4244	114.51	5.6469	113.63	5.9706	114.19	4.6989	114.15	5.9178	112.87	6.1810	113.41	6.2774
07/2020	108.51	5.1904	108.72	5.6426	107.31	5.6622	106.40	5.1536	108.13	5.9240	107.80	5.1148	104.79	6.9478
08/2020	130.36	11.5838	128.03	15.4230	127.29	13.4315	125.73	11.6554	124.80	12.3587	124.63	11.8628	124.41	12.7583
09/2020	127.08	11.1506	124.54	11.1706	124.17	11.4133	126.69	9.8469	123.17	11.1859	127.09	12.0034	126.31	12.5471
10/2020	118.10	13.0178	116.59	11.4357	117.94	13.9543	116.46	13.2064	116.13	11.8914	115.46	12.2650	115.67	11.2655
11/2020	112.56	5.5050	111.03	5.2188	110.42	5.6058	109.79	5.8837	110.59	5.4917	111.85	5.1552	110.95	4.2174
12/2020	116.77	7.1909	115.21	7.7057	115.65	7.1067	116.15	7.3548	117.07	7.1287	117.39	8.0815	116.87	7.6852
01/2021	77.51	12.9795	76.69	13.2609	83.25	12.4111	81.63	15.6092	78.13	12.3623	78.30	13.8722	78.41	13.5757
02/2021	113.15	17.4681	113.64	16.1791	110.65	14.8283	110.10	16.2858	111.33	16.0790	112.76	16.7693	111.28	16.7943
03/2021	65.03	6.7062	64.41	5.7295	64.33	6.0899	64.02	5.8928	64.72	5.7375	64.43	7.0195	66.03	6.3515

04/2021	98.59	8.0385	95.90	8.2806	102.04	6.9479	100.48	7.9026	99.46	7.3808	97.96	8.0552	98.15	7.2422
05/2021	122.51	11.8674	128.41	8.6897	130.12	6.4736	130.79	6.0011	130.65	6.0890	125.59	11.3814	120.49	12.3967

b. The stratified estimated overall mean:

The sample estimated of the overall mean operation hours is confirmed to be calculated with the equation below as per "Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities" (version 04.0) /39/:

$$m_{strat} = \sum_{i=a}^{k} \frac{g_i}{N} \times m_i$$

Where:

m_{stra}	is the stratified estimated overall mean;
g_i	is the size of the i^{th} district where i=a,…,k;
N	is the population total (48,000);
m_i	is the mean of the i^{th} district where i=a,…,k.

c. The standard error of the stratified estimated overall mean:

The standard error of the stratified estimated overall mean is confirmed to be calculated as per "Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities" /39/:

$$s.e.(m_{strat}) = \sqrt{\sum_{i=a}^{k} (\frac{g_i}{N})^2 \times (1 - \frac{n_i}{g_i}) \times \frac{SD_i^{\,2}}{n_i}}$$

Where:

$s.e.(m_{strat})$	is the standard error of the stratified estimated overall mean;
g_i	is the size of the i^{th} district where i=a,…,k;
N	is the population total (48,000);
n_i	is the number of sampled units the i^{th} district where i=a,…,k;
SD_i^2	is the variance of the ith district where i=a,…,k.

d. t-value:

T-value depends on (i) the level of confidence and (ii) the size of the sample. The t-value associated with 90% confidence and the sample size of 313 is confirmed to be 1.6497 as derived in Microsoft Excel using the TINV function following "Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities" /39/.

e. Precision:

The precision associated with an estimate is confirmed to be: t-value × standard error of the mean as per "Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities" /39/.

The precision of the mean monthly solar cooker operation hours, assuming 90% confidence, is therefore confirmed to be:

Period	t-value	m_{strat}	$s.e.(m_{strat})$	Precision	Relative Precision
01/05/2020 - 31/05/2020	1.6497	132.49	0.7723	1.2741	0.96%
01/06/2020 - 30/06/2020	1.6497	113.83	0.3303	0.5449	0.48%
01/07/2020 - 31/07/2020	1.6497	107.36	0.3191	0.5265	0.49%
01/08/2020 - 31/08/2020	1.6497	126.40	0.7180	1.1845	0.94%
01/09/2020 - 30/09/2020	1.6497	125.55	0.6372	1.0513	0.84%
01/10/2020 - 31/10/2020	1.6497	116.64	0.7071	1.1665	1.00%
01/11/2020 - 30/11/2020	1.6497	110.96	0.3018	0.4979	0.45%
01/12/2020 - 31/12/2020	1.6497	116.43	0.4202	0.6932	0.60%
01/01/2021 - 31/01/2021	1.6497	79.37	0.7616	1.2565	1.58%
01/02/2021 - 28/02/2021	1.6497	111.73	0.9183	1.5149	1.36%
01/03/2021 - 31/03/2021	1.6497	64.66	0.3506	0.5783	0.89%
01/04/2021 - 30/04/2021	1.6497	99.12	0.4330	0.7143	0.72%
01/05/2021 - 31/05/2021	1.6497	127.28	0.5149	0.8495	0.67%

The relative precision is less than 10%. The data are within the required specification. Therefore, it is verified that the required confidence/precision has been met.

VVB's Sampling Approach

1) Verifier's Action

Following "Sampling and Surveys for CDM Project Activities and Programme of Activities" version 08.0/38/ and "Guideline of Sampling and surveys for CDM project activities and programmes of activities" version 04.0/39/, the verifier conducted the verification of sampling results with the following steps:

For parameter t_i and $U_{p,y}$, verification team made the sampling plan for visiting households during this verification using Acceptance Sampling approach as specified in the "Sampling and Surveys for CDM Project Activities and Programme of Activities" version 08.0/38/ with the following steps,

(d) Take a random sample of the project's sample records;

In order to determine the size of the sample household for field/onsite check, the acceptable quality level (AQL), i.e. the proportion discrepancies between the PP sample records and the VVB sample records that are acceptable is determined as 0.5% and the proportion of discrepancies between the PP sample records and VVB sample records that are unacceptable (UQL) is determined as 10% according to "Sampling and Surveys for CDM Project Activities and Programme of Activities" version 08.0/38/.

The maximum errors associated with the determination indicated above should remain at levels indicated below as per "Sampling and Surveys for CDM Project Activities and Programme of Activities"/38/:

(1) A 10% chance that the VVB will wrongly reject the PPs records (producer's risk);

(2) A 10% chance that the VVB will wrongly accept the PPs records (consumer's risk).

With the AQL of 0.5%, the UQL of 10%, the producer's risk of 10% and the consumer's risk of 10%, the size of the acceptance sampling is determined as 38 and the acceptance number is determined as 1 according to Table 1 of "Sampling and Surveys for CDM Project Activities and Programme of Activities"/38/. Therefore, verification team randomly selected 38 from the PP's sample records/19/ for $U_{p,y}$ and also 38 from the PP's sample records/17/,/18/ for t_i. Verifier used excel function "randbetween" to randomly select 76 samples from PP sample records and the sampling plan of VVB was sent to PP during the opening meeting and after the opening meeting, 76 samples were inspected and interviewed continuously by verifier during site visit.

Took a random sample selection of the PP's sample records/19/,/17/,/18/ using the excel function, and verifier conducted the interview of the 76 solar cooker end users during site visit by filling with the prepared questionnaires.

(e) Check the acceptability of the data for each record in the sample records based on the expertise;

The sample records in the monitoring survey report/19/ is found to be consistent with the 76 samples selected by verification team from the sampling conducted by the PP. Also, no discrepancy is found between the sample records/19/ and the VVB sample records.

(f) Based on the number of records where is agreement, determine if the sample records meet the requirements.

As there are no discrepant records, i.e. the discrepant record is less than the acceptance number of 1, the sample records/19/ is accepted as per "Sampling and Surveys for CDM Project Activities and Programme of Activities"/38/.

D.5. Clarification requests, corrective action requests and forward action requests raised

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
General Description of Project (E.1)	-	-	-
Remaining forward action requests from validation and/or previous verification (E.2)	-	-	-
Compliance of the project implementation with the	-	CAR 01	-

registered project design document (E.3)			
Post-registration changes (E.4)	-	-	-
Compliance of the monitoring system applied by the project with the registered monitoring plan (E.5)	CL 01	-	-
Compliance of monitoring activities with the registered monitoring plan (E.6)	-		
SDG Data and parameters fixed ex ante or at renewal of crediting period (E.6.1)	-	-	-
SDG Data and parameters monitored (E.6.2)	-	CAR 02	-
Comparison of monitored parameters with last monitoring period (E.6.3)			
Compliance of the sampling implementation with the registered sampling plan (E.6.4)	-	-	-
Assessment of data and calculation of SDG Impacts (E.7)	-		
Calculation of baseline value or estimation of baseline situation of each SDG Impact (E.7.1)	-	-	-
Calculation of project value or estimation of project situation of each SDG Impact (E.7.2)	-	-	-
Calculation of leakage (E.7.3)		-	
Calculation of net benefits as difference of baseline and project values or direct calculation for each SDG Impact (E.7.4)	-	-	-
Comparison of actual SDG Impacts with estimates in approved PDD (E.7.5)	-	-	-
Remarks on increase in achieved SDG Impacts from estimated value in approved PDD (E.7.6)		-	-
Safeguards reporting (E.8)			
Stakeholder inputs and legal disputes (E.9)	-	-	-
Others (please specify)	-	-	-
Total	**2**	**2**	**-**

SECTION E. Verification findings

E.1. General Description of Project

Means of verification

A draft monitoring report was submitted to the verification team by the project participants prior to the start of the verification activities.

It is checked that the appropriate form has been used for compiling the MR as per the Gold Standard for Global Goals Monitoring Report Template version 1.1 in October 2020/40/.

Further every section has been checked against the GS4GG Principles& Requirements/41/.

Via on-site investigation, it is confirmed that the project involves distribution and installation of 48,000 sets of solar cookers for rural households. The project activity involves dissemination of solar cooker in Xichuan County, Henan Province, China. The total rated installed capacity of the project activity is 37.128MW_{th}. The project activity enables rural households to efficiently substitute fossil fuel used in daily cooking and water boiling by solar energy and therewith avoid CO_2 emission that would have been generated by fossil fuel consumption, finally provides the affordable and clean Energy to rural households in China.

The solar cooker reduces fuel consumption through using clean solar energy. The technology to be employed is environmentally safe and sound as well as state of the art. PP purchased the solar cookers from manufacturer/11/ and distributed them to households by free. By implementing the project PP has provided an opportunity for local community to generate steady and continual income for their livelihood.

The project is applicable to the applied CDM Methodology AMS-I.C “Thermal energy production with or without electricity” (Version 19)/36/.

The location of the project activity is an ideal area for solar energy utilization.

The detailed geographic coordinates of the project included in this monitoring period is listed as below:

No.	Project Location
Host Country	P. R. China
Region:	Henan Province
Project location address:	7 townships (Jingziguan, Siwan, Xihuang, Maotang, Dashiqiao, Shangji and Jinhe) of Xichuan County

Township	Longitude	Latitude
Jingziguan	110.9790°E - 111.0316°E	33.2323°N - 33.2513°N
Siwan	111.1273°E - 111.1651°E	33.1588°N - 33.1651°N
Xihuang	111.1390°E - 111.1713°E	33.2393°N - 33.2461°N
Maotang	111.2805°E - 111.4480°E	33.1502°N - 33.2697°N
Dashiqiao	111.2509°E - 111.2592°E	33.0524°N - 33.0575°N
Shangji	111.4803°E - 111.4878°E	33.1289°N - 33.1352°N
Jinhe	111.3979°E - 111.4020°E	33.1024°N - 33.1030°N

The start date of operation of the project activity was 01/08/2011, when all the 48,000 solar cookers completely distributed for the crediting period began which has been confirmed in the PDD and validation report/3/,/4/. According to the PDD and validation report/3/,/4/, the project participant has adopted for the fixed crediting period of 10 years with the start date of crediting period of 02/05/2012.

As part of the site visit the Verification Team was able to confirm that the project description in MR is in accordance with the project description contained in the PDD/3/.

Findings

N/A

Conclusion	It can be confirmed that the final version Monitoring report/1/ is complete and transparent and in accordance with the PDD/3/ and Global Goals Monitoring Report Template version 1.1 in October 2020/40/. Refer to the below sections for details.

E.2. Remaining forward action requests from validation and/or previous verification

This is the 6th periodic verification of the project. There is no FAR from previous verifications via checking the previous verification reports/7/, and no FAR from the GS issuance Review Form for 5th GS verification/37/.

E.3. Compliance of the project implementation with the registered project design document

Means of verification

By means of an in-depth review of the PDD and the checks carried out during the on-site visit an assessment has been carried out whether the project has been implemented and operated in line with the PDD and whether all physical features of the project are in place. The following has been checked: implemented technology, project equipment as well as monitoring equipment.

The verification team leader has performed a site visit to interview with end users and staffs, in addition by all the provided evidence, it is found that the project has been put into full operation since 01/08/2011 until all the 48,000 solar cookers were distributed to households and it is found that the implementation of the project activity is in accordance with the PDD/3/. The changes in the factors and parameters used during this monitoring period to arrive at the emission reduction calculations are transparently described in the Monitoring Report/1/.

PP has provided justifications for the changes and these changes are accounted correctly while calculating emission reductions/2/. The project involves distribution and installation of 48,000 sets of solar cookers for rural households/15/. The project activity involves dissemination of solar cooker in 7 townships (Jingziguan, Siwan, Xihuang, Maotang, Dashiqiao, Shangji and Jinhe) of Xichuan County, Henan Province, China. The rated and maximum total installed capacity of the project is 37.128 MW_{th} and 42.073 MW_{th} respectively/13/.

Basic technical details of the project are summarized in below table.

Parameters	Unit	Test Results
Focus	mm	667 - 684
Aperture area	m^2	1.75 - 1.82
Rated Power	W_{th}	815.7 - 823.5
Thermal Efficiency	%	66.5% - 68.8%
The area with temperature over 400°C	cm^2	73 - 105
Maximum operational height	m	1.13 - 1.19
Maximum operational distance	m	0.67 - 0.73
Technical life of equipment	years	> 10

The technical parameters of the solar cookers are consistent with the registered PDD, also consistent with the solar cookers sales contract/11/ and the testing report of focus type solar cookers/13/.

The emission reductions achieved during this monitoring period are 67,362 tCO_2e/2/.

The details of verification against changes incorporated by PP during this monitoring period are provided in the respective sections.

PP has introduced one model of the solar cooker as defined in the sales contract /11/. The solar cooker has been verified via site inspection. Verification team herewith confirms that the specifications of solar cooker are the same as provided in the PDD and MR.

This is the 6th monitoring period of fixed 10 years crediting period and the verification team herewith confirms that the project implementation is consistent since the start date as mentioned in the PDD. There are no major obstructions or

	gaps noted during this monitoring period. The actual distribution and operation are found in accordance with the descriptions provided in the PDD. There is no deviation / change evidenced during this monitoring period and there were no delays compared to information in approved project.
Findings	CAR 01 was raised and resolved.
Conclusion	CAR 01 was raised and closed. Refer to Appendix 4 for detail assessment. Assessment concludes the following: a. The implementation status of project activity was found to be in compliance with PDD/3/. b. VVB has conducted the on-site visit to confirm the implementation status of the project w.r.t. the realized technology/11/. c. The actual operation of project activity was found to be in compliance with PDD/3/. d. There were no delays compared to information in approved project.

E.4. Post-registration changes

E.4.1. Temporary deviations from Certified Key Project Information, Project Design Document, Monitoring & Reporting Plan, applied methodology or applied standardized baseline

Not Applicable

E.4.2. Corrections

Not Applicable

E.4.3. Changes to start date of crediting period

Not Applicable

E.4.4. Permanent changes from registered monitoring plan, applied methodology or applied standardized baseline

Not Applicable

E.4.5. Changes to project design of approved project

Not Applicable

E.5. Compliance of the monitoring system applied by the project with the registered monitoring plan

Means of verification	By means of comparison of the MR with the applied CDM methodology and all applicable GS guidelines, the verification team has checked whether the monitoring system is in compliance with the monitoring plan/3/ and related requirements of the applied methodology/36/, whether the sample plan conducted accordingly, the source and the applied value of the SDG monitored parameter is acceptable; whether the parameters monitored explain the operational and management structure, responsibilities and institutional arrangement for data collection/archiving, QA/QC procedures. The monitoring system applied by the project compliance with the registered monitoring plan is demonstrated as below for corresponding SDG monitored parameters, **Primary Cook Mean Pre-Intervention $PM_{2.5}$ Exposure**

As per the Transition Annex, the Primary Cook Mean Pre-Intervention PM2.5 Exposure will be monitored once per year, 313 samples were selected from 48,000 solar cooker users to measure and record their Primary Cook Mean Pre-Intervention PM2.5 Exposure for at least 90 days, then get the average value of the samples annually, however during this monitoring period, The monitoring period in 2021 is only 5 months, and the monitoring activities of the Primary Cook Mean Pre-Intervention $PM_{2.5}$ Exposure in 2020 was conducted on 01/07/2020-28/09/2020 and 01/10/2020-29/12/2020, which is Very close to 2021 in time. In addition, the monitoring activities of this parameter in 2021 have also started on 01/05/2021 and has not yet ended now, so the monitoring data in 2020 represents the data of the entire monitoring period and the average value of the samples is calculated as 280 $\mu g/m^3$ which is confirmed as correct by checking the Household survey record/27/ of Primary Cook Mean Pre-Intervention PM2.5 Exposure measured by $PM_{2.5}$ detector (Detection range:0-999$\mu g/m^3$, Precision:1$\mu g/m^3$) by the monitoring team.

Primary Cook Mean Post-Intervention $PM_{2.5}$ Exposure

As per the Transition Annex, the Primary Cook Mean Post-Intervention PM2.5 Exposure will be monitored once per year, 313 samples were selected from 48,000 solar cooker users to measure and record their Primary Cook Mean Post-Intervention PM2.5 Exposure for at least 90 days, then get the average value of the samples annually, however during this monitoring period, The monitoring period in 2021 is only 5 months, and the monitoring activities of the Primary Cook Mean Pre-Intervention $PM_{2.5}$ Exposure in 2020 was conducted on 01/07/2020-28/09/2020 and 01/10/2020-29/12/2020, which is Very close to 2021 in time. In addition, the monitoring activities of this parameter in 2021 have also started on 01/05/2021 and has not yet ended now, so the monitoring data in 2020 represents the data of the entire monitoring period and the average value of the samples is calculated as 55 $\mu g/m^3$ which is confirmed as correct by checking the Household survey record/27/ of Primary Cook Mean Post-Intervention PM2.5 Exposure measured by $PM_{2.5}$ detector (Detection range:0-999$\mu g/m^3$, Precision:1$\mu g/m^3$) by the monitoring team.

The number of employments generated by this project

As per the PDD, the number of employments generated will be monitored once per year, hence during this monitoring period, the fixed contracts with the employees/31/ has been checked for year 2020 and 2021, it is verified that the number of jobs generated yearly during this monitoring period is 30 including 16 females and 14 males.

Salary of employees in project region

Salary of employees in project region will be monitored once for month, hence during this monitoring period, the monthly Payroll of the employees/32/ has been cross-checked, it is verified that the salary of employees during this monitoring period is 3,800 RMB/month/person and salary for men and women was the same.

Monthly solar irradiance intensity in the project region, R_i

For the parameter R_i, as per the PDD, the value is derived from official source meteorological data and monitored once per year, hence during this monitoring period, the value was issued by Nanyang Meteorological Bureau for the whole monitoring period from May 2020 to May 2021/24/. It is confirmed that the monthly value in the MR is consistent with the official source meteorological data/24/, thus is verified as correct.

Ongoing Sampling Studies: Usage rate $U_{p,y}$ and monthly operating time t_i

i. Usage rate $U_{p,y}$

The sampling plan/25/ and monitoring survey records for usage rate/19/ are verified by the verification team, it is confirmed that the sample size determination for determine the parameter $U_{p,y}$ in the monitoring survey is in line with the GS requirement “Gold Standard Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices”/44/.

PP has employed stratified sampling method and random sample selection methodology to ensure the final sample selected for this parameter monitoring

	survey was representative. It is verified that the method is in line with GS requirement “Gold Standard Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices”/44/. Monitoring parameter of $U_{p,y}$ was determined by conducting Usage Survey which is weighted based on drop off rates that are representative of the age distribution for project solar cookers in the total sales record. It is conducted on annually basis. The usage survey has been conducted in this monitoring period by monitoring team from PP, the start date for 90 days monitoring of the 2 groups were 01/05/2020 and 01/08/2020 separately. The monitoring activities of $U_{p,y}$ in 2020 was conducted on 01/05/2020-29/07/2020 and 01/08/2020-29/10/2020, which is very close to 2021 in time. In addition, the monitoring period in 2021 is only 5 months, the monitoring activities of this parameter in 2021 have also started on 01/05/2021 and has not yet ended now, so the monitoring data in 2020 represents the data of the entire monitoring period. For sampling survey as requested in the GS requirement “Gold Standard Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices”/44/, 100 end users of solar cooker have been selected and visited by monitoring team members which has been confirmed by checking the monitoring survey records for usage rate/19/. Overall, 100 solar cookers with only one age (same age group, due to all 48,000 solar cookers had been completely distributed in May to July in 2011 and no more units will be added into the project with the progress of the project) were monitored. Random sampling approach has been applied for selection of samples. It is confirmed that the sample size fulfils the minimum sample size requirement of continuous use monitoring in the GS rule of Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices/44/. All measurements and interviews in the usage survey have been conducted in person within the household, and questionnaire has also been used to collect responses from interviewees. Above mentioned evidences were provided to the verification team during site verification. PP conducted the usage survey fulfilled with the level B. Good Practice Monitoring Requirements as requested in the “Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices (23/08/2017)”/44/. Refer to section D.4 for the assessment of Level A and B. **ii. monthly operating time t_i** Monitoring parameter of t_i was determined by conducting sampling survey which measured daily and recording the daily operating time of the solar cookers finally aggregate to the monthly value. The usage survey has been conducted in 313 sample households daily for different year, which means 626 (313 for 2020 and 313 for 2021) in this monitoring period by monitoring team members filling the related monitoring forms designed by PP/17/. The monitoring team members were well trained by how to measure the time of using by cloak and watch before filling the forms which has been confirmed by checking the training records/30/ and interview with the monitoring team members. For sampling survey as designed in the PDD/3/, 313 end users of solar cooker have been selected to monitor the operating time daily for different year, which means 626 (313 for 2020 and 313 for 2021) in this monitoring period. Stratified sampling method and Random sampling approach has been applied for selection of samples as per the PDD sampling design. It is confirmed that the sample size fulfils the requirement of the guideline of the sampling as stated in the PDD/3/. Via checking the sampling method as stated in the sampling plan/25/, it is verified that the method is in line with the PDD sampling plan/25/. All measurements of the operating time have been conducted by end users, and monitoring forms have been used to record the time which has been confirmed by checking the filled monitoring forms by monitoring team members/17/ and on-site interview with the users. The results show that all the sampled record the operating time accordingly by watch or clock, the monthly operating time has been calculated

	correctly which has been checked and confirmed in t_i calculation sheet/18/ against the original forms filled in sample households/17/. Above mentioned evidences were provided to the verification team during site verification. Via checking the above evidence, it is confirmed that t_i for this monitoring period is correct and reasonable. **Distribution Record and Project Database** PP has maintained the Solar Cooker Sales contract/11/ and invoice of the solar cookers/12/. The related information of household and solar cooker is included in the User information registration form/14/ and cross checked the Solar cookers usage agreements/15/. For this project, all 48,000 solar cookers had been completely distributed in 2011 and no more units have been added into the project with the progress of the project. **Quality Assurance and Quality Control** The related QA/QC procedure has been conducted by PP for the monitoring process including data verification and cross check by monitoring team and project owner which has been verified by checking the related sampling plan/25/ and monitoring survey records for usage rate/19/,/17/. It is confirmed that the QA/QC procedure has been implemented by PP properly during this monitoring period and the data management is confirmed as effective. **Non-Double counting assessment** The VVB has checked for double counting by reviewing all relevant registries including VCS and other GHGs programs such as EU ETS, IREC or subnational, various regional schemes such as the Canadian and American provincial/state-based schemes. It is confirmed that there is no potential exists for Double Counting of emissions reductions due to issuance of Gold Standard CERs/CO_2-certificates from the considered project activity. Furthermore, for the project end users and solar cookers number management, to avoid the double counting, PP has implemented the related actions as the unique serial No. of the solar cookers corresponding to one end users, the serial number of solar cookers have been verified during site visit and confirmed as consistent with the user information registration form/14/, project users' information is also verified during site visit and confirmed as consistent with the User information registration form/14/. It is concluded that the PP has taken method to avoid the double counting to ensure the ER calculation is conservative. Thus the risk of double counting is unlikely to happen. In conclusion, the MP is completely in accordance with the approved methodology applied by the GS project, GS guideline for usage survey and PDD.
Findings	CL 01 was raised and resolved.
Conclusion	CL 01 was raised and closed. Refer to Appendix 4 for detail assessment. The monitoring plan complies with the applied methodology and the monitoring system and all applied procedures are completely in compliance to the latest approved monitoring plan and the methodology.

E.6. Compliance of monitoring activities with the registered monitoring plan

E.6.1. SDG Data and parameters fixed ex ante or at renewal of crediting period

Means of verification

The values of ex-ante parameter assessed in the table given below:

Ex Ante Data and Parameters

Parameters	Value	Source of Data	Demonstration by Verification team
R – SDG 13 Standard solar irradiance intensity used to calculate rated power of the solar cooker	700 W_{th}/m^2	Derived from National Standard of the People's Republic of China for solar cookers (GB NY/T219-2003)/46/	PP has applied value of 700 W_{th}/m^2, this value is applied as per National Standard of the People's Republic of China for solar cookers (GB NY/T219-2003)/46/ and listed in ex-ante determined value in

			Transition Annex/8/. This value is found correct and acceptable.
A – SDG 13 Solar cooker's light-collecting area	$1.7m^2$	Derived from Solar Cooker Sales contract/11/ as stated in the technical specification of the solar cooker	PP has applied value of $1.7m^2$, this value is applied as per technical specification of the solar cooker listed in the Solar Cooker Sales contract/11/ and listed in ex-ante determined value in Transition Annex/8/. This value is found correct and acceptable.
H– SDG 13 Solar cooker's thermal efficiency	65%	Derived from Solar cooker testing report provided by the solar cooker vendors and cross check with the National Standard of the People's Republic of China for solar cookers (GB NY/T219-2003)/46/ request the solar cooker's thermal efficiency should be no less than 65%	PP has applied value of 65%, this value is applied as per Solar cooker testing report/13/ and national standard/46/ is cross-checked. Also this is listed in ex-ante determined value in Transition Annex/8/. This value is found correct and acceptable.
$\eta_{BL,thermal}$– SDG 13 Thermal efficiency for the traditional coal furnace	15%	Derived from registered PDD, validation report and Clean Energy for Development and Economic Growth: Biomass and Other Renewable Energy Options to Meet Energy and Development Needs in Poor Nations.	PP has applied value of 15%, this is an ex-ante fixed value during the crediting period, the value is consistent among the registered/3/, the validation report/4/ and the Clean Energy for Development and Economic Growth: Biomass and Other Renewable Energy Options to Meet Energy and Development Needs in Poor Nations issued by UNDP/51/. Also this is listed in ex-ante determined value in Transition Annex/8/. This value is found correct and acceptable.
Mother-Child (< 5) Exposure Ratio – SDG 3 The scaling factor applied to user-input cook pre- and post-exposures to adjust under five children's exposures	0.8%	0.8% is derived from HAPIT to be used as the standard value of Mother-Child (< 5) Exposure Ratio	PP has applied value of 0.8%, this value is applied as per the HAPIT Value /49/. Also this is listed in ex-ante determined value in Transition Annex/8/. This value is found correct and acceptable.
Cook to Other Adult Exposure Ratio – SDG 3 The scaling factor applied to user-input cook pre- and post-exposures to adjust non-cook adults	0.6%	0.6% is derived from HAPIT to be used as the standard value of Cook to Other Adult Exposure Ratio	PP has applied value of 0.6%, this value is applied as per the HAPIT Value /49/. Also this is listed in ex-ante determined value in Transition Annex/8/. This value is found correct and acceptable.

	People Per HH – SDG 3 The number of people per household	3	3 is derived from HAPIT which is defaults to the value derived from UNPD and GACC databases	PP has applied value of 3, this value is applied as per the HAPIT Value (Defaults to the value derived from UNPD and GACC databases)/49/. Also this is listed in ex-ante determined value in Transition Annex/8/. This value is found correct and acceptable.
	Kids <5 Per HH– SDG 3 **The** number of children per household	0.3	0.3 is derived from HAPIT which is the default value for the IHME-derived population under 5 divided by the HAPIT-calculated number of households in a country	PP has applied value of 0.3, this value is applied as per the HAPIT Value (The default value is the IHME-derived population under 5 divided by the HAPIT-calculated number of households in a country)/49/. Also this is listed in ex-ante determined value in Transition Annex/8/. This value is found correct and acceptable.
	Adults Per HH– SDG 3 The adults per household	2.7	2.7 is derived from HAPIT which is the default value calculated by the number of people per household minus children per household	PP has applied value of 2.7, this value is applied as per the HAPIT Value (the default value is the number of people per household minus children per household)/49/. Also this is listed in ex-ante determined value in Transition Annex/8/. This value is found correct and acceptable.
	Intervention Useful Life– SDG 3 The useful lifetime of the intervention	5	5 is derived from HAPIT, the project lifetime is 10 years. This value limited to five years because of presumed instability in background disease estimates beyond five years.	PP has applied value of 5, this value is applied as per the HAPIT/49/. Also this is listed in ex-ante determined value in Transition Annex/8/. This value is found correct and acceptable.
	The assessment team has checked that all the ex-ante parameters were fixed at the level of PA and were verified from the transition annex/8/. Also, the ex-ante parameter values have been consistently applied for the ER calculation which is evident from the ER calculation sheet/2/.			
Findings	N/A			
Conclusion	The value mentioned in the Monitoring Report/1/ and Emission Reduction Spreadsheet/2/ are consistent with the transition annex/8/. The applied value is correct and justified.			

E.6.2. SDG Data and parameters monitored

Means of verification

1. t_i

Relevant SDG indicator:	SDG13
Data/Parameter	t_i
Description	The monthly operating time of each solar cooker
Value applied for this monitoring period	

Month	Using hour (hour)
2020.05	132
2020.06	114

		2020.07 | 107 2020.08 | 126 2020.09 | 126 2020.10 | 117 2020.11 | 111 2020.12 | 116 2021.01 | 79 2021.02 | 112 2021.03 | 65 2021.04 | 99 2021.05 | 127
	Measuring /Reading /Recording frequency	The usage time of cookers is measured and recorded daily. At the end of each month, all the daily data of the past month are summarized to produce the monthly usage time.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the registered PDD/3/ and Transition Annex/8/.
	Monitoring equipment with accuracy	Clock, watch or cell phone Accuracy: 1 minute
	Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	The calibration of Clock, watch or cell phone only need to be conducted when the clock and the device that does not automatically update the time online, the time calibration shall be carried out weekly according to the device that automatically updates the time online. During this monitoring period, via checking the monitoring data, it is confirmed that the monitoring is continuous and no calibration carried out.
	How were the values in the monitoring report verified?	Monitoring parameter of $\mathbf{t_i}$ was determined by conducting sampling survey which measured daily and recording the daily operating time of the solar cookers finally aggregate to the monthly value. The usage survey has been conducted in 313 sample households daily for different year, which means 626 (313 for 2020 and 313 for 2021) in this monitoring period by monitoring team members filling the related monitoring forms designed by PP/17/. The monitoring team members were well trained by how to measure the time of using by cloak and watch before filling the forms which has been confirmed by checking the training records/30/ and interview with the monitoring team members. For sampling survey as designed in the PDD/3/, 313 end users of solar cooker have been selected to monitor the operating time daily for each year (total 626 for this monitoring period). Stratified sampling method and Random sampling approach has been applied for selection of samples as per the PDD

	sampling design. It is confirmed that the sample size fulfils the requirement of the guideline of the sampling as stated in the PDD/3/. Via checking the sampling method it is verified that the method is in line with the PDD sampling plan/25/. All measurements of the operating time have been conducted by monitoring team members, and monitoring forms have been used to record the time which has been confirmed by checking the filled monitoring forms by members /17/ and on-site interview with the users. The results show that all the sampled record the operating time accordingly by watch, clock or cell phone, the monthly operating time has been calculated correctly which has been checked and confirmed in t_i calculation sheet/18/ against the original forms filled in sample households/17/. Above mentioned evidences were provided to the verification team during site verification. To check if the PP sample data is correct, the verifier conducted the sampling approach during the site visit. 38 samples were selected by verifier and interviewed during site inspection. Refer to section D.4 of this report for VVB's sampling action. Via checking the above evidence, it is confirmed that t_i for this monitoring period is correct and reasonable.
If applicable, has the reported data been cross-checked with other available data? (Yes / No)	Yes. The t_i calculation sheet/18/ was cross checked with filled monitoring forms by monitoring team members/17/ and by on-site interview results.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable.

2. **R_i**

Relevant SDG indicator:	SDG 13
Data/Parameter	**R_i**
Description	Monthly solar irradiance intensity in the project region

Value applied for this monitoring period

Month	R_i
2020.05	560.35
2020.06	608.87
2020.07	625.78
2020.08	668.26
2020.09	653.85
2020.10	584.65
2020.11	500.64
2020.12	438.47
2021.01	433.38

	2021.02 457.21 2021.03 467.52 2021.04 498.56 2021.05 553.68
Measuring /Reading /Recording frequency	Once per year
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the registered PDD/3/ and Transition Annex/8/.
Monitoring equipment with accuracy	N/A The value is derived from Official source meteorological data
Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
How were the values in the monitoring report verified?	The values are derived from official source meteorological data and monitored once per year, hence during this monitoring period, the values were issued by Nanyang Meteorological Bureau for the whole monitoring period/24/. It is confirmed that the monthly value in the MR is consistent with the official source meteorological data/24/, thus is verified as correct.
If applicable, has the reported data been cross-checked with other available data? (Yes / No)	No. The data is official source no cross-check is needed.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	No. The data is official source and no addition QA/QC procedures may need to be planned.

3. $EF_{FF,CO2}$

Relevant SDG indicator:	SDG13
Data/Parameter	**$EF_{FF,CO2}$**
Description	CO_2 emission factor of coal
Value applied for this monitoring period	87.3 tCO_2/TJ
Measuring /Reading /Recording frequency	$EF_{FF,CO2}$ is an IPCC default value. The data is sourced from IPCC 2006.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the value will be updated upon revision of the IPCC/35/, which is in accordance with the registered monitoring plan/3/ and the monitoring methodology AMS-I.C version 19/36/.
Monitoring equipment with accuracy	N/A
Is the installed monitoring equipment has been duly	N/A

calibrated for this entire monitoring period? (Yes / No)	
How were the values in the monitoring report verified?	The verification team has verified the data in monitoring report against the value in the IPCC 2006/35/, which are consistent between each other, and was in line with the requirements of the registered monitoring plan/3/ and the applied monitoring methodology AMS-I.C version 19/36/. And through checking the IPCC website/35/, it is confirmed that no revision of the IPCC from the 2006 version.
If applicable, has the reported data been cross-checked with other available data? (Yes / No)	Yes. $EF_{FF,CO2}$ is an IPCC default value. The data is sourced from IPCC 2006/35/.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable.

4. Primary Cook Mean Pre-Intervention $PM_{2.5}$ Exposure - The measurement-based average pre-intervention exposure to $PM_{2.5}$ of the primary cook in households

Relevant SDG indicator:	SDG3
Data/Parameter	**Primary Cook Mean Pre-Intervention $PM_{2.5}$ Exposure**
Description	The measurement-based average pre-intervention exposure to $PM_{2.5}$ of the primary cook in households
Value applied for this monitoring period	280 µg /m^3 for the 6th monitoring period
Measuring /Reading /Recording frequency	Once per year[2]
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the Transition Annex/8/.
Monitoring equipment with accuracy	The value is derived from Household survey record/27/ of Primary Cook Mean Pre-Intervention PM2.5 Exposure measured by $PM_{2.5}$ detector (Detection range:0-999µg/m^3, Precision:1µg/m^3) by the monitoring team
Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	Via checking the manufacturer's documents/28/, the $PM_{2.5}$ detector equipment has been calibrated and verified before delivery, and the device has a one-key smart calibration function, thus no duly calibration is requested for this device is confirmed and verified.

[2]The monitoring period in 2021 is only 5 months, the monitoring activities of the Primary Cook Mean Pre-Intervention $PM_{2.5}$ Exposure in 2021 have started on 01/05/2021 and has not yet ended now, so the monitoring data in 2020 represents the data of the entire monitoring period.

How were the values in the monitoring report verified?	As per the request in Transition Annex, the Primary Cook Mean Pre-Intervention PM2.5 Exposure was monitored once per year, 313 samples were selected from 48,000 solar cooker users to measure and record their Primary Cook Mean Pre-Intervention PM2.5 Exposure for at least 90 days by using the device of $PM_{2.5}$ detector/27/, then get the average value of the samples annually. The related PM2.5 values of 313 sample household is included in the Household survey record/27/ of Primary Cook Mean Pre-Intervention PM2.5 Exposure and the average value of the samples calculated annually. Via comparing with the PM2.5 values of 313 samples, it is verified that the data in MR is correct.
If applicable, has the reported data been cross-checked with other available data? (Yes / No)	Not applicable.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable.

5. Primary Cook Mean Post-Intervention $PM_{2.5}$ Exposure - The measurement-based average post-intervention exposure to $PM_{2.5}$ of the primary cook in households

Relevant SDG indicator:	SDG3
Data/Parameter	**Primary Cook Mean Post-Intervention $PM_{2.5}$ Exposure**
Description	The measurement-based average post-intervention exposure to $PM_{2.5}$ of the primary cook in households
Value applied for this monitoring period	55 µg /m^3 for the 6th monitoring period
Measuring /Reading /Recording frequency	Once per year[3]
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the Transition Annex/8/.
Monitoring equipment with accuracy	The value is derived from Household survey record/27/ of Primary Cook Mean Post-Intervention PM2.5 Exposure measured by $PM_{2.5}$ detector (Detection range:0-999µg/m^3, Precision:1µg/m^3) by the monitoring team
Is the installed monitoring	Via checking the manufacturer's

[3] The monitoring period in 2021 is only 5 months, the monitoring activities of the Primary Cook Mean Pre-Intervention $PM_{2.5}$ Exposure in 2021 have started on 01/05/2021 and has not yet ended now, so the monitoring data in 2020 represents the data of the entire monitoring period.

equipment has been duly calibrated for this entire monitoring period? (Yes / No)	documents/28/, the $PM_{2.5}$ detector equipment has been calibrated and verified before delivery, and the device has a one-key smart calibration function, thus no duly calibration is requested for this device is confirmed and verified.
How were the values in the monitoring report verified?	As per the request in Transition Annex, the Primary Cook Mean Post-Intervention PM2.5 Exposure was monitored once per year, 313 samples were selected from 48,000 solar cooker users to measure and record their Primary Cook Mean Post-Intervention PM2.5 Exposure for at least 90 days by using the device of $PM_{2.5}$ detector/27/, then get the average value of the samples annually. The related PM2.5 values of 313 sample household is included in the Household survey record/27/ of Primary Cook Mean Post-Intervention PM2.5 Exposure and the average value of the samples calculated annually. Via comparing with the PM2.5 values of 313 samples, it is verified that the data in MR is correct.
If applicable, has the reported data been cross-checked with other available data? (Yes / No)	Not applicable.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable.

6. Employment generated - The number of employment generated by this project

Relevant SDG indicator:	SDG8
Data/Parameter	Employment generated
Description	The number of employment generated by this project
Value applied for this monitoring period	All for local people From 01/05/2020 to 31/12/2020, 30 jobs for local people were generated and 16 female and 14 male employees included. From 01/01/2021 to 31/05/2021, 30 jobs for local people were generated and 16 female and 14 male employees included. In the 6th monitoring period from 01/05/2020 to 31/05/2021, 30 jobs for local people were generated and 16 female and 14 male employees included.
Measuring /Reading /Recording frequency	Once per year
Is measuring and reporting frequency in accordance with the monitoring plan and	Yes, the measuring and reporting frequency are in line with the Transition Annex/8/.

monitoring methodology? (Yes / No)	
Monitoring equipment with accuracy	N/A The value is derived from fixed contracts with the employees/31/.
Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
How were the values in the monitoring report verified?	Monitoring parameter of number of jobs generated was determined by checking the fixed contracts with the employees/31/ has been checked, it is verified that the number of jobs generated during this monitoring period is 30 (same per year). It is verified that the data in MR is correct.
If applicable, has the reported data been cross-checked with other available data? (Yes / No)	Yes. The fixed contracts with the employees/31/ was cross checked with payroll of the employment/32/ and training records of employees/29/ and on-site interview with staffs.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable.

7. Salary - Salary of employees in project region

Relevant SDG indicator:	SDG8
Data/Parameter	**Salary**
Description	Salary of employees in project region
Value applied for this monitoring period	3,800 CNY/Month from 01/05/2020 to 31/12/2020 3,800 CNY/Month from 01/01/2021 to 31/05/2021 3,800 CNY/Month for the 6th monitoring period
Measuring /Reading /Recording frequency	Once per month
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the Transition Annex/8/.
Monitoring equipment with accuracy	N/A The value is derived from monthly payroll of the employees/32/
Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
How were the values in the monitoring report verified?	Monitoring parameter of number of jobs generated was determined by checking the

	monthly payroll of the employees/32/ and fixed contracts with the employees/31/ has been cross checked, it is verified that monthly salary of employees during this monitoring period is 3,800 CNY/Month and salary for men and women was the same. It is verified that the data in MR is correct.
If applicable, has the reported data been cross-checked with other available data? (Yes / No)	Yes. The payroll of the employees/32/ and on-site interview with staffs.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable.

8. **$U_{p,y}$**

Relevant SDG:	SDG3, SDG 7, SDG 13
Data/Parameter	**$U_{p,y}$**
Description	Usage rate of solar cookers engaged in the proposed project
Value applied for this monitoring period	76.97%
Measuring /Reading /Recording frequency	Once per year
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the GS guideline/44/.
Monitoring equipment with accuracy	N/A
Is the installed monitoring equipment has been duly calibrated for this entire monitoring period?	N/A
How were the values in the monitoring report verified?	Monitoring parameter of $U_{p,y}$ was determined by conducting Usage Survey which is weighted based on drop off rates that are representative of the age distribution for project solar cookers in the total sales record. The usage survey has been conducted in this monitoring period by monitoring team from PP, the start date for 90 days monitoring of the 2 groups were 01/05/2020 and 01/08/2020 separately. The monitoring activities of $U_{p,y}$ in 2020 was conducted on 01/05/2020-29/07/2020 and 01/08/2020-29/10/2020, which is very close to 2021 in time. In addition, the monitoring period in 2021 is only 5 months, the monitoring activities of this parameter in 2021 have also started on 01/05/2021 and has not yet ended now, so the monitoring data in 2020 represents the data of the entire monitoring period.

			For sampling survey as per the GS rule of Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices/44/, 100 end users of solar cooker have been selected and visited by monitoring team members which has been confirmed by checking the monitoring survey records for usage rate/19/. Overall, 100 solar cookers with only one age (same age group, due to all 48,000 solar cookers had been completely distributed in May to July 2011 and no more units have been added into the project with the progress of the project) were monitored. Random sampling approach has been applied for selection of samples. It is confirmed that the sample size fulfils the minimum sample size requirement of continuous use monitoring in the GS rule of Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices/44/. Via checking the sampling method as stated in the monitoring survey record/19/, it is verified that the method is in line with the sampling plan/25/ and GS rule of Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices/44/. All measurements and interviews in the usage survey have been conducted in person within the household, and questionnaire has also been used to collect responses from interviewees. The results show that 93% surveyed solar cookers were in normal use by the households during the monitoring period by questionnaire survey/21/ but capped as 90% as per the "Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices" (23/08/2017)/44/, and through questionnaire survey results for the number of days that units are not in use/21/, the average share of running time is calculated as 85.52%, thus the weighted usage rate is calculated as 76.97% (90% * 85.52%) which has been checked and confirmed in usage rate calculation sheet/20/ against the original questionnaires filled by sample households/21/ and the monitoring survey record/19/. Above mentioned evidences were provided to the verification team during site verification. PP conducted the usage survey fulfilled with the level B. Good Practice Monitoring Requirements as requested in the "Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices (23/08/2017)"/44/. Refer to section D.4 of this report for VVB's assessment for level B fulfilment. To check if the PP sample data is correct, the

	verifier conducted the sampling approach during the site visit. 38 samples were selected by verifier and interviewed during site inspection. Refer to section F.4 of this report for VVB's sampling action. It is verified that the data in MR is correct.
If applicable, has the reported data been cross-checked with other available data?	Yes. The usage rate calculation sheet/20/ is cross-checked with the monitoring survey record/19/ and filled questionnaires/21/.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable.

9. n - Number of solar cookers engaged in the proposed project

Relevant SDG indicator:	SDG3, SDG 7, SDG 13
Data/Parameter	**n**
Description	Number of solar cookers engaged in the proposed project
Value applied for this monitoring period	48,000
Measuring /Reading /Recording frequency	Once for each monitoring period
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the registered PDD/3/ and Transition Annex/8/.
Monitoring equipment with accuracy	N/A The value is derived from sales contract and invoice of the solar cookers
Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
How were the values in the monitoring report verified?	Monitoring parameter of Number of solar cookers engaged in the proposed project was determined by checking Solar Cooker Sales contract/11/ and invoice of the solar cookers/12/. The related information of household and solar cooker is included in the User information registration form/14/ and cross checked the Solar cookers usage agreements/15/. For this project, all 48,000 solar cookers had been completely distributed in 2011 and no more units have been added into the project with the progress of the project. As per the Transition Annex/8/, the value ex ante applied considered the using rate, however, during this monitoring period, based on the FAR#1 issued in 4th GS verification/37/, it is verified that the usage rate need to the monitored as a parameter according to "Requirements and Guidelines for carrying out

		usage surveys for projects implementing improved cooking devices" (23/08/2017)/44/, so the value of Number of solar cookers engaged in the proposed project was determined as 48,000 which was the distributed value, and the actual operation percentage will be determined based on the result of $U_{p,y}$. It is verified that the data in MR is correct.
	If applicable, has the reported data been cross-checked with other available data? (Yes / No)	Yes. The Solar Cooker Sales contract/11/ and invoice of the solar cookers/12/ is checked and on-site interview with end users.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable.
Findings	CAR 02 was raised and resolved	
Conclusion	CAR 02 was raised and closed. Refer to Appendix 4 for detail assessment. The parameters have been monitored appropriately, in accordance with the registered monitoring plan/3/ (as per measurement methods and procedures to be applied), transition annex/8/ and applied methodology/36/ and GS guideline for usage survey/44/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan of PDD/3/ and transition annex/8/.	

E.6.3. Comparison of monitored parameters with last monitoring period

Means of verification

This is the 6th monitoring period. PP has provided the values from 5th monitoring period and values from 6th monitoring period for each monitoring parameters for comparison as below table.

Data/Parameter	Value obtained in this monitoring period			Value obtained last monitoring period		
The health changes due to the implementation of this project	Measure	Age	Mean Averted	Measure	Age	Mean Averted
	Averted DALYs	Child	520	Averted DALYs	Child	533
	Averted Deaths	Child	6	Averted Deaths	Child	6
	Averted DALYs	Adult	15,167	Averted DALYs	Adult	15,680
	Averted Deaths	Adult	837	Averted Deaths	Adult	865
	Total		17,072	Total		17,084
The increased number of households using clean energy for cooking and boiling water after the implementation of this project	43,200 households			45,120 households		
The number of employments generated by this project	30 (including 16 female and 14 male employees) employment generated from			30 (including 16 female and 14 male employees) employment generated from		
Salary of employees in project region	3,800 CNY/Month			3,800 CNY/Month		

	Emission reductions 67,362 tCO_2e 102,140 tCO_2e Via checking the verification report of 5th monitoring period/42/, CTI confirmed that the values are correct and based on the comparison, CTI verified that the values for all the monitoring parameters are not changed significantly comparing with the 5th monitoring period/42/, hence, the values for this monitoring period is verified as reasonable.
Findings	N/A
Conclusion	The comparison of monitored parameters with last monitoring period was conducted, CTI confirmed that the values are not changed significantly thus the values for this monitoring period are deemed as reasonable.

E.6.4. Compliance of the sampling implementation with the registered sampling plan

Means of verification	The monitoring has been carried out in accordance with the sampling plan contained in the PDD/3/ and GS guideline for usage survey/44/. **Sampling Design/Target Population/Sampling Frame/Reliability**: Sampling plan was provided by PP and has demonstrated in the PDD. The following will be monitored by sampling method. i. Usage Survey (US) for $U_{p,y}$ Due to the project only including the 48,000 solar cookers and distributed in the same year, no more new solar cookers accumulated along the implementation, so there is no age difference for the solar cookers. There is no this parameter of $U_{p,y}$ in the PDD or Transition Annex, however, based on the "Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices" issued by GS for the this type of project, it is requested to monitor Usage Rate $U_{p,y}$ by usage survey in line with the requirement this guideline/44/. Hence, prior to a verification, representative of project solar cookers being credited would be randomly selected from the end-user databases, and the minimum total sample size is 100. The survey would be completed annually, and on time for any request of issuance. "Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices" will be followed when conducted the usage survey, Level B. Good Practice monitoring requirements will be used for the project, including Defining stove use and non-use, Household Usage Survey, Verification checks, Field team training and supervision, End-User Training and follow up visits and Awareness campaign. ii. Sampling survey for t_i The project activity applies stratified sampling method and simple random sampling for monitoring the monthly operating time of each solar cooker, t_i, and the sample size is 313 yearly (626 for this monitoring period). The sample size is confirmed as correct which has been verified according to "Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities"/39/. The sample size of each township was decided on the method of proportional distribution and the monitoring will be conducted at the beginning of each year during the crediting period. The sampling plan is confirmed as in line with the GS requirement, CDM sampling standard and guideline and applied methodology. **Sampling Frame:** All the end users with the solar cookers installed and operational are considered as the sampling frame. **Sampling Method and selection:** The PP has applied Stratified Sampling Method and Simple Random Sampling for both $U_{p,y}$ and t_i all over the population (48,000 household with solar cookers). The samples have been chosen randomly screenshots of random generator of Excel. **Sample Size for Parameter of Interest:** The sample size is chosen using the equation inline to CDM guidelines for

Sampling and surveys for CDM project activities and programmes of activities for t_i and "Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices" for $U_{p,y}$.

In this regard, sample size calculation as stated in the PDD was checked and found correct as per registered monitoring plan. The complete details are given in PDD.

Implementation of Sampling Survey and Field Test Records:

Based on interviews with the PP and surveyors during the site visit, in addition to asking this question to the end users. Therefore, the implementation of surveys was considered reliable.

The monitoring team were trained by PP during the current monitoring period which has been verified by checking the training record/29/.

The monitoring survey for t_i (field survey / tests) was carried out by users daily during this monitoring period.

The users and the monitoring personnel were trained by PP/29/ before the starting of the project operation to ensure that they are fully aware of and able to strictly follow this conservative principle.

Reliability and precision calculation:

According to Guidelines for Sampling and surveys of CDM project activities and programmes of activities (Version 04.0)/39/, confidence/precision have been checked as follows:

a. The stratified estimated overall mean:

The sample estimated of the overall mean operation hours is confirmed to be calculated with the equation below as per "Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities"/39/:

$$m_{strat} = \sum_{i=a}^{k} \frac{g_i}{N} \times m_i$$

Where:

m_{stra}	is the stratified estimated overall mean;
g_i	is the size of the i^{th} district where i=a,…,k;
N	is the population total (48,000);
m_i	is the mean of the i^{th} district where i=a,…,k.

b. The standard error of the stratified estimated overall mean:

The standard error of the stratified estimated overall mean is confirmed to be calculated as per "Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities"/39/:

$$s.e.(m_{strat}) = \sqrt{\sum_{i=a}^{k} (\frac{g_i}{N})^2 \times (1 - \frac{n_i}{g_i}) \times \frac{SD_i^{\,2}}{n_i}}$$

Where:

s.e.(m_{strat})	is the standard error of the stratified estimated overall mean;
g_i	is the size of the i^{th} district where i=a,…,k;
N	is the population total (48,000);
n_i	is the number of sampled units the i^{th} district where i=a,…,k;
SD_i^2	is the variance of the ith district where i=a,…,k.

c. t-value:

T-value depends on (i) the level of confidence and (ii) the size of the sample. The t-value associated with 90% confidence and the sample size of 313 is confirmed to be 1.6497 as derived in Microsoft Excel using the TINV function following "Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities"/39/.

d. Precision:

	The precision associated with an estimate is confirmed to be: t-value × standard error of the mean as per "Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities"/39/. The precision of the mean monthly solar cooker operation hours, assuming 90% confidence, is therefore confirmed to be:

Period	t-value	m_{strat}	s.e. (m_{strat})	Precision	Relative Precision
01/05/2020 - 31/05/2020	1.6497	132.49	0.7723	1.2741	0.96%
01/06/2020 - 30/06/2020	1.6497	113.83	0.3303	0.5449	0.48%
01/07/2020 - 31/07/2020	1.6497	107.36	0.3191	0.5265	0.49%
01/08/2020 - 31/08/2020	1.6497	126.40	0.7180	1.1845	0.94%
01/09/2020 - 30/09/2020	1.6497	125.55	0.6372	1.0513	0.84%
01/10/2020 - 31/10/2020	1.6497	116.64	0.7071	1.1665	1.00%
01/11/2020 - 30/11/2020	1.6497	110.96	0.3018	0.4979	0.45%
01/12/2020 - 31/12/2020	1.6497	116.43	0.4202	0.6932	0.60%
01/01/2021 - 31/01/2021	1.6497	79.37	0.7616	1.2565	1.58%
01/02/2021 - 28/02/2021	1.6497	111.73	0.9183	1.5149	1.36%
01/03/2021 - 31/03/2021	1.6497	64.66	0.3506	0.5783	0.89%
01/04/2021 - 30/04/2021	1.6497	99.12	0.4330	0.7143	0.72%
01/05/2021 - 31/05/2021	1.6497	127.28	0.5149	0.8495	0.67%

	The relative precision is less than 10%. The data are within the required specification. Therefore, it is verified that the required confidence/precision has been met.
Findings	No findings were raised
Conclusion	The verification team has found out that the sampling plan applied is found to be in-line with the monitoring plan mentioned in the PDD/3/, GS guideline for usage survey/44/ and Sampling and survey standards, ver.8.0/38/

E.7. Assessment of data and calculation of SDG Impacts

E.7.1. Calculation of baseline value or estimation of baseline situation of each SDG Impact

Means of verification	***SDG 3 Baseline Impact:*** Via checking the MR and through interview with representative of staffs, it is confirmed that the project reduces the diseases or hazards caused by such injuries. Hence, in compliance with the UN's SDG indicator "3.9.1 Mortality rate attributed to household and ambient air pollution", the parameter of SDG3 are defined as ***Primary Cook Mean Pre-Intervention $PM_{2.5}$ Exposure and Primary Cook Mean Post-Intervention $PM_{2.5}$ Exposure***. In the baseline situation, as per interview with end users, it is verified that no diseases or hazards reduced without this project. Therefore, baseline impact benefit is zero. ***SDG 7 Baseline Impact:*** Via checking the MR and through interview with users, it is confirmed that the project promotes access to affordable and clean energy services. Hence, in compliance with the UN's SDG indicator "7.2.1Renewable energy share in the total final energy consumption", the monitoring parameter of SDG7 is defined as ***Number of solar cookers engaged in the proposed project***. In the baseline situation, as per the interview with users, it is verified that no distribution of project technology. Therefore, baseline impact benefit is zero. ***SDG 8 Baseline Impact:*** Via checking the MR and through interview with representative of staffs, it is confirmed that the project generated jobs. Hence, in compliance with the UN's SDG indicator "8.5.2 Unemployment rate, by

sex, age and persons with disabilities", the parameter of SDG8 are defined as ***Number of employment generated and Salary***.

In the baseline situation, as per interview with representative of staffs, it is verified that no new job generated and no income without this project. Therefore, baseline impact benefit is zero.

SDG 13 Baseline Impact:

Via checking the MR and through checking the emission reduction calculation sheet, it is confirmed that there were baseline emissions as calculated below,

Baseline Emissions $BE_{b,y}$ Calculation Assessment:

The formula used for the determination of baseline emissions which is consistent with the PDD:

$$BE_y = BE_{thermal,CO2,y}$$

$$= n \times U_{p,y} \Sigma[773.5 \times (R_i/700) \times t_i \times 3.6 \times 10^{-9}] \times EF_{FF,CO2}/\eta_{BL,thermal} \ (i=1,2,...,12)$$

Where:

BE_y	: the baseline emission (tCO_2e)
R_i	: the actual solar irradiance intensity in month *i* in W_{th}/m^2;
t_i	: the usage time of the solar cooker in month *i* in hours;
n	: the total number of solar cookers installed by the project;
$EF_{FF,CO2}$	: the CO_2 emission factor of coal(tCO_2e/TJ);
$\eta_{BL,thermal}$	: the efficiency of the coal-fired stove that would have been used in the absence of project activity.

The input to calculate baseline emissions are taken from the related monitoring surveys records for Usage rate/19/ and for operation time t_i /17/,/18/ done during monitoring period.

The values monitored during such surveys are transparently shown in the Monitoring Report Section D.2. During onsite, the verification team cross-checked these values in detail using various supporting records and documents. Refer to the section E.6.1 and E.6.2 of this report for parameters assessment.

The **SDG 13 baseline impact** (Baseline emission calculation) is provided in the Emission reduction calculation spreadsheet/2/ in a transparent manner and the calculation found correct. There is no material error noted in the accounting and application of various data against monitored parameters.

The baseline impact for SDG 13 during this monitoring period is summarized as below,

Date	**Solar irradiance intensity** W_{th}/m^2	**Usage Rate %**	**Actual Power of Solar Cooker** W_{th}	**Monthly Usage Time** h	**Net Heat Supplied Monthly** TJ	**GS CER Generated Monthly** tCO_2e
	R_i	$U_{p,y}$	P_i	t_i	$EG_{thermal,i}$	$BE_{thermal,co_2,i}$
01/05/2020-31/05/2020	560.35	76.97%	619.19	132	10.91	6,349
01/06/2020-30/06/2020	608.87	76.97%	672.80	114	10.19	5,928
01/07/2020-31/07/2020	625.78	76.97%	691.49	107	9.87	5,746
01/08/2020-31/08/2020	668.26	76.97%	738.43	126	12.41	7,223
01/09/2020-30/09/2020	653.85	76.97%	722.50	126	12.06	7,020
01/10/2020-31/10/2020	584.65	76.97%	646.04	117	10.02	5,832
01/11/2020-30/11/2020	500.64	76.97%	553.21	111	8.16	4,750

	01/12/2020-31/12/2020	438.47	76.97%	484.51	116	7.50	4,366
	01/01/2021-31/01/2021	433.38	76.97%	478.88	79	5.05	2,941
	01/02/2021-28/02/2021	457.21	76.97%	505.22	112	7.51	4,369
	01/03/2021-31/03/2021	467.52	76.97%	516.61	65	4.44	2,585
	01/04/2021-30/04/2021	498.56	76.97%	550.91	99	7.26	4,226
	01/05/2021-31/05-2021	553.68	76.97%	611.82	127	10.36	6,027
	Total						**67,362**
	Total **SDG 13 baseline impact,** i.e. baseline emissions of the 6th monitoring period (01/05/2020-31/05/2021) is thus verified as 67,362 tCO_2e.						
Findings	CAR 03 was raised and resolved						
Conclusion	CAR 03 was raised and closed. Refer to Appendix 4 for detail assessment. The verification team confirms that a) The complete data was available and is duly reported; b) As indicated above, the description with regard to cross-check of reported data is included under respective parameter (refer Section E.6.2. of this report); c) Appropriate methods and formulae for calculating baseline SDG Impact; d) Appropriate emission factors and other reference values were correctly applied. e) The calculation of baseline situation of each SDG Impact is correct.						

E.7.2. Calculation of project value or estimation of project situation of each SDG Impact

Means of verification	***SDG 7 Project Impact:*** For SDG Indicator 7.2.1, the project distributed and installed 48,000 solar cookers, by considering the usage rate of 90% as assessed in E.6.2, it is verified that the actual number of solar cookers engaged in the 6th monitoring period is 43,200. 43,200 households reached by the project activity could access to affordable and clean energy. From 01/05/2020 to 31/12/2020, 43,200 solar cookers were in normal use From 01/01/2021 to 31/05/2021, 43,200 solar cookers were in normal use Therefore, the SDG 7 project impact in the 6th monitoring period from 01/05/2020 to 31/05/2021 was 43,200 households. ***SDG 8 Project Impact:*** From 01/05/2020 to 31/12/2020, the project provided 30 employment positions including 16 females and 14 males employees to local villagers, and all the jobs were paid and work fairly, which is verified in section E.6.2. The average earnings of the employees is 3,800 CNY/month which has been verified in section E.6.2. From 01/01/2021 to 31/05/2021, the project provided 30 employment positions including 16 females and 14 males employees to local villagers, and all the jobs were paid and work fairly, which is verified in section E.6.2. The average earnings of the employees is 3,800 CNY/month which has been verified in section E.6.2. For 6th monitoring period from 01/05/2020 to 31/05/2021, the project provided 30 employment positions including 16 females and 14 males employees to local villagers, and all the jobs were paid and work fairly, which is verified in section E.6.2. The average earnings of the employees is 3,800 CNY/month which has been verified in section E.6.2. ***SDG 3 Project Impact:*** According to the Transition Annex/8/, the methodology "Methodology to Estimate and Verify Averted Mortality and Disability Adjusted Life Years (ADALYs) from Cleaner Household Air" (Version 1.0)/45/ is checked as applied in the project. The tool "HAPIT – Household Air Pollution Intervention Tool" (3.1.1)/49/ is checked as applied in the project. Via the monitoring results of values of ***Primary Cook Mean***

	Pre-Intervention $PM_{2.5}$ Exposure and Primary Cook Mean Post-Intervention $PM_{2.5}$ Exposure, it is verified that the corresponding values of Averted DALYs and Averted Deaths for both Adult and Child as listed in the section E.2 of MR are correct and valid during this monitoring period. So, the calculation of project value or estimation of project situation of SDG3 impact during the monitoring period is: Unit：Ill-health Averted

Period	Primary Cook Mean Pre-Intervention $PM_{2.5}$ Exposure（μg/m³）	Primary Cook Mean Post-Intervention $PM_{2.5}$ Exposure（μg/m³）	Measure	Age	Mean Averted
01/05/2020-31/12/2020	280	55	Averted DALYs	Child	520
			Averted Deaths	Child	6
			Averted DALYs	Adult	15,167
			Averted Deaths	Adult	837
01/01/2021-31/05/2021			Averted DALYs	Child	520
			Averted Deaths	Child	6
			Averted DALYs	Adult	15,167
			Averted Deaths	Adult	837
6th monitoring period (01/05/2020-31/05/2021)			Averted DALYs	Child	520
			Averted Deaths	Child	6
			Averted DALYs	Adult	15,167
			Averted Deaths	Adult	837

	Thus it is verified that the project impact for SDG 3 is correct. ***SDG 13 Project Impact:*** ***Project Emission Calculation Assessment:*** As per the PDD and applied methodology, there is no project emission for the solar cooker project. Thus project impact for SDG 13 is zero.
Findings	N/A
Conclusion	The verification team confirms that a) The complete data was available and is duly reported; b) As indicated above, the description with regard to cross-check of reported data is included under respective parameter (refer Section E.6.2. of this report); c) Appropriate methods and formulae for calculating project SDG Impact were followed; The calculation of project situation of each SDG Impact is correct.

E.7.3. Calculation of leakage

Means of verification	Via checking the PDD of this project and applied methodology, it is confirmed that no leakage for this project was identified.
Findings	N/A
Conclusion	The verification team confirms that no leakage is considered.

E.7.4. Calculation of net benefits as difference of baseline and project values or direct calculation for each SDG Impact

Means of verification	Calculation of net benefits as difference of baseline and project values or direct calculation for each SDG Impact is as following,

Goal 3 Net Benefit

Period	Primary Cook Mean Pre-Intervention $PM_{2.5}$ Exposure (μg/m³)	Primary Cook Mean Post-Intervention $PM_{2.5}$ Exposure (μg/m³)	Measure	Age	Mean Averted
01/05/2020-31/12/2020	280	55	Averted DALYs	Child	520
			Averted Deaths	Child	6
			Averted DALYs	Adult	15,167
			Averted Deaths	Adult	837
01/01/2021-31/05/2021			Averted DALYs	Child	520
			Averted Deaths	Child	6
			Averted DALYs	Adult	15,167
			Averted Deaths	Adult	837
6th monitoring period (01/05/2020-31/05/2021)			Averted DALYs	Child	520
			Averted Deaths	Child	6
			Averted DALYs	Adult	15,167
			Averted Deaths	Adult	837

Goal 7 Net Benefit

Net Benefit SDG 7 for 01/05/2020 to 31/05/2021 = Project impact of SDG7 (43,200) – Baseline impact of SDG7 (0) =43,200 households

Net Benefit SDG 7 for 01/05/2020 to 31/12/2020 = Project impact of SDG7 (43,200) – Baseline impact of SDG7 (0) =43,200 households

Net Benefit SDG 7 for 01/01/2021 to 31/05/2021= Project impact of SDG7 (43,200) – Baseline impact of SDG7 (0) =43,200 households

Goal 8 Net Benefit

From 01/05/2020 to 31/05/2021, Net Benefit SDG 8 (jobs generated) = Project impact of SDG8 (30 jobs for local people generated (including 16 female and 14 male employees)) – Baseline impact of SDG8 (0) =30 jobs for local people generated (including 16 female and 14 male employees)

From 01/05/2020 to 31/12/2020, Net Benefit SDG 8 (jobs generated) = Project impact of SDG8 (30 jobs for local people generated (including 16 female and 14 male employees)) – Baseline impact of SDG8 (0) =30 jobs for local people generated (including 16 female and 14 male employees)

From 01/01/2021 to 31/05/2021, Net Benefit SDG 8 (jobs generated) = Project impact of SDG8 (30 jobs for local people generated (including 16 female and 14 male employees)) – Baseline impact of SDG8 (0) =30 jobs for local people generated (including 16 female and 14 male employees)

From 01/05/2020 to 31/05/2021, Net Benefit SDG 8 (income) = Project impact of SDG8 (3,800 CNY/month) – Baseline impact of SDG8 (0) =3,800 CNY/month

From 01/05/2020 to 31/12/2020, Net Benefit SDG 8 (income) = Project impact of SDG8 (3,800 CNY/month) – Baseline impact of SDG8 (0) =3,800 CNY/month

From 01/01/2021 to 31/05/2021, Net Benefit SDG 8 (income) = Project impact of

	SDG8 (3,800 CNY/month) – Baseline impact of SDG8 (0) =3,800 CNY/month ***Goal 13 Net Benefit*** In accordance with applied methodology, registered PDD and validation report, Net Benefit SDG 13 = baseline emission – project emission – leakage emission = 67,362 tCO_2e - 0 tCO_2e -0 tCO_2e = 67,362 tCO_2e

Emission Reductions Calculation

Parameters / Period	Baseline Emissions BE_y (tCO_2e)	Project Emissions PE_y (tCO_2e)	Leakage Emissions LE_y (tCO_2e)	Emission Reductions ER_y (tCO_2e)
01/05/2020-31/12/2020	47,214	0	0	47,214
01/01/2021-31/05/2021	20,148	0	0	20,148
Total	**67,362**	**0**	**0**	**67,362**

All the figures as per the monitoring report were cross-checked by the verification team against basic monitored data. Refer to E.6.2 for details.

Findings	N/A
Conclusion	The verification team confirms that a) The complete data was available and is duly reported; b) As indicated above, the description with regard to cross-check of reported data is included under respective parameter (refer Section E.6.2. of this report); c) Appropriate methods and formulae for calculating net benefits for each SDG Impact were followed; The calculation of net benefits for each SDG Impact is correct.

E.7.5. Comparison of actual SDG Impacts with estimates in approved PDD

Means of verification

The verification team has checked if the MR includes a comparison of actual values of the monitoring period with the estimations in the registered PDD or Transition Annex for each SDG. Conclusion is as below table

Item	Values estimated in ex ante calculation of approved PDD or Transition Annex	Actual values achieved during this monitoring period
SDG 3	01/05/2020-31/12/2020: The primary Cook Mean Pre-Intervention $PM_{2.5}$ Exposure is 321µg/m^3, the Primary Cook Mean Post-Intervention $PM_{2.5}$ Exposure is 108 µg/m^3.	01/05/2020-31/12/2020: The primary Cook Mean Pre-Intervention $PM_{2.5}$ Exposure is 280 µg/m^3, the Primary Cook Mean Post-Intervention $PM_{2.5}$ Exposure is 55 µg/m^3.

Measure	Age	Mean Averted
Averted DALYs	Child	334
Averted Deaths	Child	4
Averted DALYs	Adult	8,846
Averted Deaths	Adult	486

Measure	Age	Mean Averted
Averted DALYs	Child	520
Averted Deaths	Child	6
Averted DALYs	Adult	15,167
Averted Deaths	Adult	837

		01/01/2021-31/05/2021: The primary Cook Mean Pre-Intervention $PM_{2.5}$ Exposure is 321μg/m^3, the Primary Cook Mean Post-Intervention $PM_{2.5}$ Exposure is 108 μg/m^3. Total 6th monitoring period: The primary Cook Mean Pre-Intervention $PM_{2.5}$ Exposure is 321μg/m^3, the Primary Cook Mean Post-Intervention $PM_{2.5}$ Exposure is 108 μg/m^3.	01/01/2021-31/05/2021: The primary Cook Mean Pre-Intervention $PM_{2.5}$ Exposure is 280 μg/m^3, the Primary Cook Mean Post-Intervention $PM_{2.5}$ Exposure is 55 μg/m^3. Total 6th monitoring period: The primary Cook Mean Pre-Intervention $PM_{2.5}$ Exposure is 280 μg/m^3, the Primary Cook Mean Post-Intervention $PM_{2.5}$ Exposure is 55 μg/m^3.
	SDG7	01/05/2020-31/12/2020: 48,000 households distributed 01/01/2021-31/05/2021: 48,000 households distributed 6th monitoring period from 01/05/2020 to 31/05/2021: 48,000 households distributed	01/05/2020-31/12/2020: 43,200 households operated 01/01/2021-31/05/2021: 43,200 households operated 6th monitoring period from 01/05/2020 to 31/05/2021: 43,200 households operated
	SDG 8	01/05/2020-31/12/2020: 30 jobs 3,800 CNY/month (The salary for men and women was the same) 01/01/2021-31/05/2021: 30 jobs 3,800 CNY/month (The salary for men and women was the same) 6th monitoring period from 01/05/2020 to 31/05/2021: 30 jobs 3,800 CNY/month (The salary for men and women was the same)	01/05/2020-31/12/2020: 30 jobs (16 female and 14 male) 3,800CNY/month (The salary for men and women was the same) 01/01/2021-31/05/2021: 30 jobs (16 female and 14 male) 3,800 CNY/month (The salary for men and women was the same) 6th monitoring period from 01/05/2020 to 31/05/2021: 30 jobs (16 female and 14 male) 3,800 CNY/month (The salary for men and women was the same)
	SDG 13	01/05/2020-31/12/2020: 60,547 tCO_2e 01/01/2021-31/05/2021: 37,317 tCO_2e	01/05/2020-31/12/2020: 47,214 tCO_2e 01/01/2021-31/05/2021: 20,148 tCO_2e

Measure	Age	Mean Averted
Averted DALYs	Child	334
Averted Deaths	Child	4
Averted DALYs	Adult	8,846
Averted Deaths	Adult	486

Measure	Age	Mean Averted
Averted DALYs	Child	520
Averted Deaths	Child	6
Averted DALYs	Adult	15,167
Averted Deaths	Adult	837

	Total 6th monitoring period: 97,864 tCO_2e Total 6th monitoring period: 67,362 tCO_2e
Findings	CL 02 was raised and resolved
Conclusion	CL 02 was raised and closed. Refer to Appendix 4 for detail assessment. The MR includes a summary table of comparison of actual values of the monitoring period with the estimations in the Transition Annex and PDD for each SDG.

E.7.6. Remarks on increase in achieved SDG Impacts from estimated value in approved PDD

Means of verification	For SDG 3, CTI confirmed that the actual value during this monitoring period was found to be higher than ex-ante estimated value the for this project during this monitoring period due to the air quality is getting better in project area which is verified by checking the local government website/50/, hence it is reasonable that the actual ill-health Averted values are higher than the Transition Annex estimated values. For SDG 7, the actual outcomes during this monitoring period are lower than the estimated value due to the usage rate value fluctuates according to the usage pattern of the users and nature solar sources for this kind of project, hence it is reasonable that the actual value is lower than estimated in PDD/3/ and Transition Annex/8/. For SDG 8, there is no difference by comparison of actual value of outcomes with estimates in Transition Annex/8/. For SDG 13, It is confirmed that the actual value during this monitoring period was found to be 28.5% lower than ex-ante estimated value the for this project during this monitoring period, via comparing with the PDD/3/ and Transition Annex/8/ estimated value, it is verified that the change of three parameters, i.e. R_i, t_i and Usage rate impact the actual emission reduction calculation, however these parameters depend on the solar irradiance intensity and usage pattern of the users which changes over time. Hence it is verified that the actual value lower than estimated in PDD/3/ and Transition Annex/8/ is reasonable and acceptable.
Findings	N/A
Conclusion	The actual SDG Impacts for 7 and 13 are lower and SDG Impacts for 3 is higher than the estimated values given in the registered PDD/3/ and Transition Annex/8/, which is assessed as appropriate and accepted.

E.8. Safeguards reporting

Means of verification	Via checking the Section B in approved Transition Annex/8/, CTI confirmed that there are no safeguarding principles need to be monitored. And via site visit and interview with end users, CTI verified that the project was implemented normally and in line with the design in the PDD/3/ and approved Transition Annex/8/, there was no information on any assessment questions answered 'Potentially' related to Safeguarding principles. All the Information on any assessment questions answered as "No", so there is no need to re-assessment the Safeguarding principles.
Findings	N/A
Conclusion	All the Information on any assessment questions answered as "No", so there is no need to re-assessment the Safeguarding principles during this monitoring period.

E.9. Stakeholder inputs and legal disputes

Means of verification	As confirmed through the onsite visit and interview with the end users, it is verified that the inputs/grievances mechanism has been in place. As per onsite checking the Grievance Book/34/ and internet/email address/33/ which has been provided during the validation process and interview with PP and local stakeholders, it is verified that they have access to provide issues or comments through given methods. And via checking the different approach, it is verified that there was no input/grievance received during this monitoring period.
Findings	N/A

Conclusion	All the methods of continuous input /grievance mechanism are confirmed during on-site investigation and interviews. It is verified that there are no comments/complaints received from the stakeholders during this monitoring period of the project activity.

SECTION F. Internal quality control

The final verification report was undergone a technical review by a qualified independent reviewer before requesting issuance of the project activity. The technical review was performed by a technical reviewer qualified in accordance with CTI's qualification scheme for CDM and GS validation and verification that meets the criteria of EB and GS guidelines for qualification.

SECTION G. Verification opinion

The verification team assigned by the VVB (CTI) concludes that the 6th periodic verification of GS programme of activities "Nanyang Danjiang River Solar Cooker Project Phase I" in Sichuan Province, China, as described in the approved PDD, GS approved transition annex and final version of monitoring report, meets all relevant requirements set by the Gold Standard for the Global Goals Principles and Requirements and relevant guidance provided by CMP, CDM and relevant guidance provided by CMP and the CDM Executive Board.

The project activity was correctly implemented according to selected monitoring methodology and monitoring plan. The collected monitoring data allowed to verify the amount of achieved SDG Impacts. And the project is contributed to sustainability development. Thus, the VVB is pleased to issue a positive verification opinion.

SECTION H. Certification statement

Shenzhen CTI International Certification Co., Ltd (CTI) has performed the 6th periodic verification of the SDG Impacts that have been reported for the GS project activity "Nanyang Danjiang River Solar Cooker Project Phase I" in Henan Province, P. R. China for the period 01/05/2020 to 31/05/2021.

The verification is based on the baseline and monitoring methodology AMS-I.C "Thermal energy production with or without electricity" (Version 19), the approved PDD, GS approved Transition Annex and the final version of monitoring report. The verification consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up on-site visit and interviews with project participants; iii) resolution of outstanding issues and the issuance of the final verification and certification report.

The PPs are responsible for the collection, calculation and determination of the SDG Impacts data in accordance with the monitoring plan and the reporting of SDG Impacts on the basis set out within the project monitoring report.

It is CTI's responsibility to provide an independent verification statement on the reported SDG Impacts for the project. Based on an understanding of the risks associated with reporting of SDG Impacts data and the controls in place to mitigate these, CTI planned and performed our work to obtain the information and explanations that we considered necessary to provide reasonable assurance that reported SDG contributions are fairly stated.

CTI confirms that the SDG Impacts are calculated without material misstatements. Based on the evidence and information that are considered necessary to guarantee that SDG contributions are appropriately calculated, CTI confirms that the SDG contributions from the "Nanyang Danjiang River Solar Cooker Project Phase I" in Henan Province, P. R. China during the monitoring period 01/05/2020 to 31/05/2021 as follows:

Monitoring Period Number: 6th

Monitoring period: 01/05/2020 to 31/05/2021

The verified amount of each SDG impact in the PA as per vintage is stated below;

<table>
<tr><th rowspan="2">SDG No.</th><th colspan="2">SDG impacts for Vintage year</th><th>Total SDG impacts for this Monitoring Period</th></tr>
<tr><td>01/05/2020 to 31/12/2020</td><td>01/01/2021 to 31/05/2021</td><td>01/05/2020 to 31/05/2021</td></tr>
<tr><td>SDG 3</td>
<td>The primary Cook Mean Pre-Intervention $PM_{2.5}$ Exposure is 280 μg/m^3, the Primary Cook Mean Post-Intervention $PM_{2.5}$ Exposure is 55 μg/m^3.
<table><tr><th>Measure</th><th>Age</th><th>Mean Averted</th></tr><tr><td>Averted DALYs</td><td>Child</td><td>520</td></tr><tr><td>Averted Deaths</td><td>Child</td><td>6</td></tr><tr><td>Averted DALYs</td><td>Adult</td><td>15,167</td></tr><tr><td>Averted Deaths</td><td>Adult</td><td>837</td></tr></table></td>
<td>The primary Cook Mean Pre-Intervention $PM_{2.5}$ Exposure is 280 μg/m^3, the Primary Cook Mean Post-Intervention $PM_{2.5}$ Exposure is 55 μg/m^3.
<table><tr><th>Measure</th><th>Age</th><th>Mean Averted</th></tr><tr><td>Averted DALYs</td><td>Child</td><td>520</td></tr><tr><td>Averted Deaths</td><td>Child</td><td>6</td></tr><tr><td>Averted DALYs</td><td>Adult</td><td>15,167</td></tr><tr><td>Averted Deaths</td><td>Adult</td><td>837</td></tr></table></td>
<td>The primary Cook Mean Pre-Intervention $PM_{2.5}$ Exposure is 280 μg/m^3, the Primary Cook Mean Post-Intervention $PM_{2.5}$ Exposure is 55 μg/m^3.
<table><tr><th>Measure</th><th>Age</th><th>Mean Averted</th></tr><tr><td>Averted DALYs</td><td>Child</td><td>520</td></tr><tr><td>Averted Deaths</td><td>Child</td><td>6</td></tr><tr><td>Averted DALYs</td><td>Adult</td><td>15,167</td></tr><tr><td>Averted Deaths</td><td>Adult</td><td>837</td></tr></table></td></tr>
<tr><td>SDG 7</td><td>43,200 solar cookers were in normal use.</td><td>43,200 solar cookers were in normal use</td><td>43,200 solar cookers were in normal use</td></tr>
<tr><td rowspan="2">SDG 8</td><td>30 jobs were generated and 16 female employees included.</td><td>30 jobs were generated and 16 female employees included.</td><td>30 jobs were generated and 16 female employees included.</td></tr>
<tr><td>The salary of employees were 3,800 CNY/month and equal for men and women</td><td>The salary of employees were 3,800 CNY/month and equal for men and women</td><td>The salary of employees were 3,800 CNY/month and equal for men and women</td></tr>
<tr><td>SDG 13</td><td>47,214 tCO_2e</td><td>20,148 tCO_2e</td><td>67,362 tCO_2e</td></tr>
</table>

Du wenjun

Mr. Du Wenjun
Team Leader
15/10/2021

Wang Guolian

Ms. Wang Guolian
Technical Reviewer
15/10/2021

Appendix 1. Abbreviations

Abbreviations	Full texts
AQL	Acceptable quality level
BE	Baseline Emissions
Board	Executive Board of the clean development mechanism
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM-EB	CDM Executive Board (the board)
CER	Certified Emission Reductions
CL	Clarification Request
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
COP	Conference of the Parties
CTI	Shenzhen CTI International Certification Co., Ltd
DNA	Designated National Authority
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse Gas
GS	Gold Standard
GS4GG	Gold Standard for the Global Goals
GS-TAC	Technical Advisory Committee of GS
GSP	Gold Standard Passport
GWP	Global Warming Potential
MoC	Modalities of communication
MoV	Means of Verification
MP	Monitoring Plan
MR	Monitoring Report
PE	Project Emission
PoA	Programme of Activities
PoA-DD	PoA Design Document
PRC	Post Registration Change
PS	Project Standard
QA/QC	Quality Assurance / Quality Control
SCR	Stakeholder Consultation Report
SD	Sustainable Development
SDI	Sustainability Development Indicator
SDG	Sustainable Development Goals
SDM	SD Matrix
SFR	Stakeholder Feedback Round
SS	Sectoral Scope
SSC	Small-scale
TA(s)	Technical Area(s)
UNFCCC	United Nations Framework Convention on Climate Change
UQL	Unacceptable Quality Level
VVB	Validation and Verification Body
VVS	Validation and Verification Standard

Appendix 2. Competence of team members and technical reviewers

Mr. Wenjun DU

Satisfies the requirements of competence management system of CTI Certification, and is hereby appointed as:

Qualification						
Status	GHG Auditor	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date	√	√	√	√	-	√

Scope	Technical Area
SS 1: Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources
SS 13: Waste handling and disposal	TA 13.1: Solid waste and wastewater
	TA 13.2: Manure

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by:

Wu LIN Wu Lin

Technical Competent Manager

Shenzhen, 01/01/2021

Ms. Guolian WANG

Satisfies the requirements of competence management system of CTI Certification, and is hereby appointed as:

Qualification						
Status	GHG Auditor	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date	√	√	√	√	√	√

Scope	Technical Area
SS 1: Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources
SS 3: Energy demand	TA 3.1: Energy demand
SS 4: Manufacturing industries	TA 4.1. Cement and lime production
SS 5: Chemical industry	TA 5.1: Chemical industry
	TA 5.2: Caprolactam, nitric and adipic acid
SS 11: Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	TA 11.1: Emissions of fluorinated gases
	TA 11.2: Refrigerant gas production
SS 12: Solvents use	TA 12.1: Chemical industry

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by:

Wu LIN Wu Lin

Technical Competent Manager

Shenzhen, 01/01/2021

Appendix 3. Documents reviewed or referenced

No	Author	Title	References to the document	Provider
1.	Sirreon Technology and Development (Beijing) Co., Ltd	6th periodic GS4GG Monitoring Report of "Nanyang Danjiang River Solar Cooker Project Phase I"	- Draft Version No. 01, dated 16/06/2021 - Final Version No. 02, dated 20/07/2021 - Final Version No. 03, dated 15/10/2021 after GS review	Sirreon Technology and Development (Beijing) Co., Ltd
2.	Sirreon Technology and Development (Beijing) Co., Ltd	6th periodic GS4GG Emission Reduction Calculation spreadsheet of "Nanyang Danjiang River Solar Cooker Project Phase I"	- Version No. 01, dated 16/06/2021 - Final Version No. 02, dated 16/09/2021 after GS review	Sirreon Technology and Development (Beijing) Co., Ltd
3.	UNFCCC	CDM Project Design document of "Nanyang Danjiang River Solar Cooker Project Phase I"	Registered Project Design Document for CDM project: "Nanyang Danjiang River Solar Cooker Project Phase I", version 07, dated 16/04/2012	UNFCCC website
4.	TÜV Rheinland	CDM Validation Report	Validation Report for CDM project "Nanyang Danjiang River Solar Cooker Project Phase I" Revision No. 02.2, dated 17/04/2012.	UNFCCC
5.	DOE	CDM Verification Report	Previous Verification Report, 1st – 6th CDM monitoring period	UNFCCC
6.	TÜV Rheinland	GS Validation Report	GS Validation Report, version 4.0, dated 29/08/2013	GS
7.	VVB	GS Verification Report	Previous GS Verification Report 1st – 5th GS monitoring period	GS
8.	Sirreon Technology and Development (Beijing) Co., Ltd	GS4GG Transition Annex	GS4GG Transition Annex for "Nanyang Danjiang River Solar Cooker Project Phase I", version 01	Sirreon Technology and Development (Beijing) Co., Ltd
9.	Beijing City Administrative Bureau for Industry and Commerce	Business License	Business License of Sirreon Technology & Development (Beijing) Co., Ltd issued on 2010-09-03 valid to 2030-09-02	Sirreon Technology and Development (Beijing) Co., Ltd
10.	Sirreon Technology & Development (Beijing) Co., Ltd & Nanyang City Jinlong Solar Technology Co., Ltd.	Commissioning Confirmation	Commissioning Confirmation issued dated 31/07/2011	Sirreon Technology & Development (Beijing) Co., Ltd
11.	Sirreon Technology & Development (Beijing) Co., Ltd & Nanyang City Jinlong Solar Technology Co., Ltd	Solar cookers sales contract	Solar cookers sales contract signed dated 28/05/2011	Sirreon Technology & Development (Beijing) Co., Ltd
12.	Sirreon Technology & Development (Beijing) Co., Ltd	Invoice of the solar cookers	Invoice of the solar cookers	Sirreon Technology & Development (Beijing) Co., Ltd
13.	Nanyang City	Testing report of focus	Testing report of focus type	Sirreon

	Quality and Technology Supervision and Testing Centre	type solar cookers	solar cookers issued dated 05/12/2011	Technology & Development (Beijing) Co., Ltd
14.	Sirreon Technology & Development (Beijing) Co., Ltd	User information registration form	User information registration form	Sirreon Technology & Development (Beijing) Co., Ltd
15.	Sirreon Technology & Development (Beijing) Co., Ltd & local residents	Solar cookers usage agreements	Solar cookers usage agreements signed dated 31/05/2011	Sirreon Technology & Development (Beijing) Co., Ltd
16.	Sirreon Technology & Development (Beijing) Co., Ltd	Sample Records	Monthly operating time of solar cookers sampled by project participants as the aggregation of the daily operating hour records during this monitoring period	Sirreon Technology & Development (Beijing) Co., Ltd
17.	Sirreon Technology & Development (Beijing) Co., Ltd	Original daily operating hour records in monitoring forms	t_i monitoring forms designed by PP filled by monitoring team members with original daily operating hour records	Sirreon Technology & Development (Beijing) Co., Ltd
18.	Sirreon Technology & Development (Beijing) Co., Ltd	t_i calculation sheet	t_i calculation sheet based on the t_i monitoring forms filled by monitoring team members	Sirreon Technology & Development (Beijing) Co., Ltd
19.	Sirreon Technology & Development (Beijing) Co., Ltd	Monitoring survey records for usage rate	Monitoring survey records for usage rate collected from 100 samples information and used for Usage rate calculation	Sirreon Technology & Development (Beijing) Co., Ltd
20.	Sirreon Technology & Development (Beijing) Co., Ltd	Usage Rate Calculation Sheet	Usage rate calculation sheet based on the monitoring survey records and questionnaire survey results	Sirreon Technology & Development (Beijing) Co., Ltd
21.	Sirreon Technology & Development (Beijing) Co., Ltd	Questionnaire survey for usage rate	Usage survey filled questionnaires by 100 samples	Sirreon Technology & Development (Beijing) Co., Ltd
22.	Sirreon Technology & Development (Beijing) Co., Ltd	Pictures of the project solar cookers	Pictures of the project solar cookers, Pictures of solar cookers used in the kitchen of the households Pictures of the project solar cookers checked by PP	Sirreon Technology & Development (Beijing) Co., Ltd
23.	Sirreon Technology & Development (Beijing) Co., Ltd	Record of verification checks	Record of verification checks conducted by PP in November 2020	Sirreon Technology & Development (Beijing) Co., Ltd
24.	Nanyang Meteorological Bureau	Monthly solar irradiance intensity	Monthly solar irradiance intensity, dated 05/01/2021 (for year 2020) and 05/06/2020 (for year 2021) covering this monitoring period	Sirreon Technology & Development (Beijing) Co., Ltd
25.	Sirreon Technology & Development (Beijing) Co., Ltd	Sampling plan	Sampling Plan for sampling survey guide	Sirreon Technology & Development (Beijing) Co., Ltd
26.	Sirreon Technology & Development (Beijing) Co., Ltd	Monitoring Manual	CDM Monitoring & Management Manual for the project activity and CDM project site management rules and	Sirreon Technology & Development (Beijing) Co., Ltd

			regulations	
27.	Sirreon Technology & Development (Beijing) Co., Ltd	PM2.5 Exposure survey result	Household survey record of Primary Cook Mean Pre-Intervention PM2.5 Exposure and Primary Cook Mean Post-Intervention PM2.5 Exposure	Sirreon Technology & Development (Beijing) Co., Ltd
28.	VENTSUNTEC TECHNOLOGY CO., LTD.	Manufacturer's documents for $PM_{2.5}$ detector	Manufacturer's documents for $PM_{2.5}$ detector	Sirreon Technology & Development (Beijing) Co., Ltd
29.	Sirreon Technology & Development (Beijing) Co., Ltd	Training and Competence Records	Training and Competence Records of project 1. Monitoring Training Records in 2020 and 2021 for staffs including attendance list 2. Training Plan	Sirreon Technology & Development (Beijing) Co., Ltd
30.	Sirreon Technology & Development (Beijing) Co., Ltd	End-user training records	End-user training records of using and maintenance solar cookers and measuring the using time of solar cookers	Sirreon Technology & Development (Beijing) Co., Ltd
31.	Sirreon Technology & Development (Beijing) Co., Ltd and employees	Fixed contracts with the employees	Labor contracts signed with 30 employees for implementation of this project	Sirreon Technology & Development (Beijing) Co., Ltd
32.	Sirreon Technology & Development (Beijing) Co., Ltd	Payroll of the employees	Monthly Payroll for employees	Sirreon Technology & Development (Beijing) Co., Ltd
33.	Sirreon Technology & Development (Beijing) Co., Ltd	Internet/email address	Internet/email address for inputs/grievances mechanism	Sirreon Technology & Development (Beijing) Co., Ltd
34.	Sirreon Technology & Development (Beijing) Co., Ltd	Grievance Book	Grievance Book kept by the officer in office of village committee in each village.	Sirreon Technology & Development (Beijing) Co., Ltd
35.	IPCC	IPCC	• IPCC Good Practice Guidance & Uncertainty Management in National Greenhouse Gas Inventories, 2000 • Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual	Public Website
36.	UNFCCC	CDM Approved Small Scale Methodology AMS-I.C	"Thermal energy production with or without electricity" (Version 19.0)	UNFCCC website
37.	GS	GS issuance Review Form for 4th GS verification	GS issuance Review Form for 4th GS verification	GS website
38.	UNFCCC	Sampling and Survey Standard	Standard of sampling and surveys for CDM project activities and programme of activities" version 08.0	UNFCCC website
39.	UNFCCC	Guideline of Sampling and surveys	"Guideline of Sampling and surveys for CDM project activities and programmes of activities" version 04.0	UNFCCC website
40.	GS	GS4GG MR template	Gold Standard for Global Goals	GS Website

			Monitoring Report Template version 1.1 in October 2020	
41.	GS	Gold Standard for the Global Goals Principles and Requirements	Version 1.2	GS Website
42.	GS	Gold Standard for the Global Goals Safeguarding Principles & Requirements	Version 1.2	GS Website
43.	GS	Gold Standard for the Global Goals Community Services Activity Requirements	Version 1.2	GS Website
44.	GS	"Gold Standard Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices"	Publication Date: 23/08/2017	GS Website
45.	Household Air Pollution Intervention Tool	"Methodology to Estimate and Verify Averted Mortality and Disability Adjusted Life Years (ADALYs) from Cleaner Household Air"	Version 1.0	Public Website
46.	National Standard	GB NY/T219-2003	National Standard of the People's Republic of China for solar cookers	Public Website
47.	UNFCCC	Project Standard	CDM project standard for project activities (Version 02.0)	UNFCCC
48.	UNFCCC	Validation and Verification Standard	CDM validation and verification standard for project activities (Version 02.0)	UNFCCC
49.	Household Air Pollution Intervention Tool	HAPIT Value	"HAPIT – Household Air Pollution Intervention Tool" (3.1.1) https://householdenergy.shinyapps.io/hapit3/#	Public website
50.	Henan Province Government	Air Quality	https://www.henan.gov.cn/2018/09-21/692225.html	Public website
51.	UNDP: Clean Energy for Development and Economic Growth	UNDP	Biomass and Other Renewable Energy Options to Meet Energy and Development Needs in Poor Nations dated 2002 http://www.undp.org/energy/publications/2002/2002b.htm http://content.undp.org/go/cmsservice/download/publication/?version=live&id=2102581	Website
52.	Gold Standard Organization	Gold Standard	http://www.goldstandard.org/	Website
53.	IPCC	IPCC publications	www.ipcc-nggip.iges.or.jp	Website
54.	UNFCCC	UNFCCC	http://cdm.unfccc.int	Website

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

Table 1. Remaining FAR from validation and/or previous verification

FAR ID	N/A	**Section no.**	N/A	**Date:** N/A
Description of FAR				
Project participant response				**Date:**
Documentation provided by project participant				
VVB assessment				**Date:**

Table 2. CL from this verification

CL ID	01	**Section no.**	C	**Date:** 10/07/2021
Description of CL				
In the section C, 1. The monitoring survey time period for t_i during this monitoring period is not clarified. 2. For monitoring process implemented for monthly operating time of each solar cooker, MR stated that "626 samples (313*2) were selected from 48,000 solar cooker users by stratified sampling method using MS Excel Software", however, why PP chose 626 samples (313*2) is not clarified.				
Project participant response				**Date:** 20/07/2021
1.PP added the monitoring survey time period, i.e., every day of this monitoring period. 2. PP have modified the description as: Sampling survey method was used for the monitoring of t_i and 313 samples in 2020 and 313 samples in 2021 were respectively selected from 48,000 solar cooker users by stratified sampling method using MS Excel Software during this monitoring period (01/05/2020 to 31/05/2021). Therefore, a total of 626 (313*2) samples were used to monitor ti during this monitoring period.				
Documentation provided by project participant				
/1/ version 02 /17/				
VVB assessment				**Date:** 21/07/2021
1. The revised MR is checked, CTI confirmed that the monitoring survey time period for t_i during this monitoring period is clarified which has been verified as correct by checking the filled monitoring forms by monitoring team members/17/ and on-site interview with the users. 2. The revised MR is checked, CTI confirmed that 313 samples were surveyed for each year in 2020 and 2021, total for this monitoring period is 626 which has been confirmed by checking the filled monitoring forms by monitoring team members/17/ and for operation time t_i. This is deemed conservative. CL 01 is closed.				

CL ID	02	**Section no.**	E.5	**Date:** 10/07/2021
Description of CL				
In the section E.5, the comparison of actual SDG Impacts with estimates in approved PDD has been provided in the MR, but for some SDGs, there were no estimates in approved PDD, clarification is requested.				
Project participant response				**Date:** 20/07/2021
As this project is transferred from CDM, so the registered document that can be referred to are PDD and Transition Annex. Some SDGs that have not been estimated in approved PDD are estimated in the transition annex.				
Documentation provided by project participant				
/1/ version 02				
VVB assessment				**Date:** 21/07/2021
The revised MR is checked, it is confirmed that the related information has been added into this section, the estimated values from both approved PDD and Transition Annex has been stated in the MR which is verified as correct and actual. CL 02 is closed				

Table 3. CAR from this verification

CAR ID	01	**Section no.**	B.1	**Date:** 10/07/2021
Description of CAR				
In the section B.1, the milestones are not related to main actions for this monitoring period. Sampling survey information is missing.				
Project participant response				**Date:** 20/07/2021

PP have added the survey date for $U_{p,y}$ and t_i

Time	**Milestone**
01/05/2020-29/07/2020	The survey date for $U_{p,y}$
01/08/2020-29/10/2020	The survey date for $U_{p,y}$
01/05/2020-31/05/2021	The survey time period for t_i

Documentation provided by project participant	
/1/ version 02	
VVB assessment	**Date:** 21/07/2021
The revised MR is checked, it is confirmed that the time periods of sampling survey have been added into milestone which are confirmed as correct in section B.1 and is same to the section C of the MR. CAR 01 is closed.	

CAR ID	02	**Section no.**	D.2	**Date:** 10/07/2021
Description of CAR				
In the section D.2, for monitoring process implemented for monthly operating time of each solar cooker ti, MR stated that "626(313*2) samples in this monitoring period for monitoring", however, why PP chose 626 samples (313*2) is not specified.				
Project participant response				**Date:** 20/07/2021
PP revised the relevant expressions as follows·: According to statistical principles, 313 samples is sufficient to represent the entire population of 48,000 and the 313 sample users for different year (2020 and 2021) were selected from 48,000 solar cookers at the beginning of every year by stratified sampling method using MS Excel Software. So, there are 626(313 for 2021 and 313 for 2020) samples in this monitoring period for monitoring t_i.				
Documentation provided by project participant				
/1/ version 02 /8/				
VVB assessment				**Date:** 21/07/2021
The revised MR is checked, CTI confirmed that 313 samples were surveyed for each year in 2020 and 2021, total for this monitoring period is 626 which has been confirmed by checking the filled monitoring forms by monitoring team members/17/ and for operation time t_i. This is deemed conservative. CAR 02 is closed.				

Table 4. FAR from this verification

FAR ID	xx	**Section No.**		**Date:** DD/MM/YYYY
Description of FAR				
No FAR from this verification				
Project participant response				**Date:**
Documentation provided by project participant				
VVB assessment				**Date:**