Verification report form for GS project activities	
VERICATION REPORT	
Title of the project activity	Production and dissemination of Ceramic Water Purifiers by Hydrologic, in the Kingdom of Cambodia
Reference number of the project activity	GS ID: 1020 TN P-No. : 8003030620-21/028
Version number of the Verification report	3.0
Completion date of the Verification report	07/07/2021
Monitoring period number and duration of this monitoring period	CP2 MP 3rd 01/01/2020-31/12/2020 (Including both days)
Version number of monitoring report to which this report applies	5.0
Crediting period of the project activity corresponding to this monitoring period	2nd renewable crediting period 01/12/2017 to 30/11/2024
Project Developer (s)	Hydrologic Social Enterprise, Ltd.
Host Party	Kingdom of Cambodia
Activity Requirements applied	☒ Community Services Activities ☐ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A
Sectoral scope(s), selected methodology(ies), and where applicable, selected standardized baseline(s)	Scope: 1&3 / Technical area: 1.2&3.1 GS Methodology: "Technologies and Practices to Displace Decentralized Thermal Energy Consumption, Version 3.0", July 2015
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A
SDG Contributions targeted (as per approved PDD)	Goal 1: No Poverty Goal 3: Good Health and Well-Being Goal 5: Gender Equality Goal 6: Clean Water and Sanitation Goal 7: Affordable and Clean Energy Goal 8: Decent work and economic growth Goal 13: Climate Action Goal 15: Life on Land

Estimated amount of annual average certified SDG impact (as per approved PDD)	SDG1(a): 60,063 tonne of biomass save/year SDG1(b): 868 tonne of LPG save/year SDG1(c): 88.20% of household noted on money save SDG1(d): 89.60% of household noted on time save SDG3: 698,148 people noted less smoke in kitchen SDG5: 327,289 women and girls benefit from stop boiling water SDG6: 763,838 people access to safe drinking water SDG7: 942 TJ of energy save/year SDG8: 105 staff employed/year SDG13: 85,834 tCO_2e/year SDG15: 370 Hectare of forest save/year
Total amount of certified SDG impact (as per approved methodology) achieved in this monitoring period	SDG1(a): 65,540 tonne of biomass save/year SDG1(b): 956 tonne of LPG save/year SDG1(c): 82.10% of household noted on money save SDG1(d): 91.20% of household noted on time save SDG3: 566,367 people noted less smoke in kitchen SDG5: 253,713 women and girls benefit from stop boiling water SDG6: 746,201 people access to safe drinking water SDG7: 1,028 TJ of energy save/year SDG8: 85 staff employed/year SDG13: 93,878 tCO_2e/year SDG15: 404 Hectare of forest save/year
Name of VVB	TÜV NORD CERT GmbH
Name, position and signature of the approver of the Verification report	 Kunal Rami Final Approver

SECTION A. Executive summary

Hydrologic Social Enterprise, Ltd. has commissioned the TÜV NORD JI/CDM Certification Program to carry out the Gold Standard for the global goals (GS4GG) 3rd periodic verification for 2nd crediting period of the project:

"Production and dissemination of Ceramic Water Purifiers by Hydrologic, in the Kingdom of Cambodia"

with regard to the relevant Gold Standard for the global goals (GS4GG) requirements.

This verification covers the period from 01/01/2020 to 31/12/2020 (including both days).

Via checking the sales record/SR/ and call interview with end users, it is confirmed that the project involves production and distribution of Ceramic water Purifiers (CWP) in Cambodia. Access to potable water in Cambodia (Host country) in villages is a common problem and people living in villages are boiling the available water (i.e. ponds, dug wells, bore wells) for drinking and cooking purpose (for safe consumption purpose). While boiling water, people use various fuels i.e. forest wood, LPG and coal which has been verified by call interview with CWP users. The objective of the project is to reduce / eliminate the water boiling practice and thereby reduce the CO_2 emissions due to usage of fossil fuel.

Ceramic filtration is the use of porous ceramic (fired clay) to filter microbes or other contaminants from drinking water. Pore size can be made small enough to remove up to 99.99% bacteria. Produced locally, the ceramic pot-style filters have the advantages of being lightweight, portable, relatively inexpensive, and chemical free, low-maintenance, effective, and easy to use.

Through the use of a clay and rice husk mixture combined with the application of silver nitrate, Hydrologic's filters provide for removal of microorganisms from water by gravity filtration through porous ceramics, with typical flow rates of 2-3 liters per hour. CWPs cool the treated water through evapotranspiration and, used with a proper storage receptacle, as provided by Hydrologic safely stores water for use. The ceramic filter surface is regenerated through regular scrubbing to reduce surface deposits.

Hydrologic Enterprise Ltd. is producing a ceramic filter from the clay locally available to filter the water. This is the well-known ancient technology and is improvised by Hydrologic to enhance the filtration rate. Hydrologic has a full-fledged factory situated in Trapeang Samrong Village/BL/, where these filters are produced utilising local skilled and unskilled workers. By implementing the project Hydrologic has provided an opportunitiy for local community to generate steady and continual income for their livelihood.

Hydrologic has introduced two models as given below along with the specifications/CWPS/. PP has provided detailed specifications along with pictures of CWP's in the PDD section A.3. The actual production and dissemination is found in accordance with the specifications provided in the approved 2nd Crediting Period PDD. Verification team herewith confirms that the specifications of Ceramic water Purifiers (CWP) are the same as provided in the following table A-1. There is no deviation / change evidenced during this monitoring period.

Hydrologic Social Enterprise Ltd. has so far distributed 452,251 units of ceramic filters in different provinces of host country, and 33,746 units during this monitoring period from 01/01/2020 to 31/12/2020, which is verified by checking the sales record/SR/ and project database/PD/. The emission reductions achieved during this monitoring period are **93,878 tCO_2e**/XLS/.

The starting date of operation of the project activity was 01/12/2010, when production of CWPs for the crediting period began which has been confirmed in the PDD and validation report/VAL/,/PDD/. The Ceramic Water Purifiers are sold throughout the Kingdom of Cambodia and are installed progressively during the crediting period, which has been confirmed in the

approved 2nd Crediting Period Validation Report/VAL/ and sales record/SR/ and previous verification report/VER/.

As per the remote verification by checking the questionnaires filled by end users and by interview with PP and staffs in office, field and factories, the Verification Team was able to confirm that the project implementation is in accordance with the project description contained in the approved 2nd crediting period PDD.

The project was registered as a GS-VER project on 08/08/2012 with the registration number of GS1020. According to the approved 2nd Crediting Period Validation Report report/VAL/ and previous verification report/VER/, the project participant has adopted for the renewble crediting period of 21 years with the start date of 01/12/2010.

Details of the project location are given in table A-1 below:

Table A-1: Project Location

No.	Project Location
Host Country	Kingdom of Cambodia
CWP Distribution Region:	All the provinces in Cambodia
Factory address:	Trapeang Samrong Village, Sub-district of Longveak, District of Kompong Tralach, Province of Kompong Chnang
Latitude:	11.8504° N
Longitude:	104.7419° E

Basic technical details of the project are summarized in table A-2.

Table - A-2: Technical data of the CWP

Model	Tunsai CWP/CWPS/	Super Tunsai CWP/CWPS/
Filter Element Type	Ceramic Clay Pot	Ceramic Clay Pot
Filter Capacity (Volume)	Approx. 10 L	Approx. 10 L
Filter Capacity (flow)	Typically - 2-3 L/Hr Typically – 30/Day	Typically - 2-3 L/Hr Typically – 30/Day
Receptacle Type	Closed safe storage food grade plastic receptacle	Closed safe storage food grade plastic receptacle
Receptacle Storage Capacity (Volume)	Approx. 12 L	Approx. 14 L
Spigot Type	Plastic	Plastic
Plastic Type	Food Grade Polypropylene	Food Grade Polypropylene

As a result of this verification, the verifier confirms that:

- all operations of the project are implemented and installed as planned and described in the validated and latest approved project design document.
- the monitoring plan is in accordance with the applied approved GS methodology, i.e., Technologies and Practices to Displace Decentralized Thermal Energy Consumption - version 3.0, July 2015.
- Installed equipments being essential for generating emission reduction run reliably and are calibrated appropriately.
- Installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately.
- the monitoring report is in accordance with the relevant GS4GG Principles&Requirements/GSPR/.
- The project contributes to sustainable development goals (SDG).
- The monitoring system is in place and functional.
- The project has generated GHG emission reductions.

As the result of the GS 3rd periodic verification for 2nd crediting period (CPII), the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner.

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 review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader (also verifier)	EI	ZHAO	Xuejiao (Fancy)	-	x		x	x
2.	Team Member (Local Expert)	EI	KHOUTH	Sochampawatd (Awatd)	-			x	

B.2. Technical reviewer and approver of the Verification 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.	TR	IR	Stöhr	Christina	TÜV NORD CERT
2.	Technical reviewer / Approver	IR	Rami	Kunal	TÜV NORD CERT

SECTION C. Application of materiality in conducting the verification

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.	*Sample*	*Medium*	*Sample size is not suitable; or the surveyed end users in the project level are not random*	*1. Cross-check the procedure to identify the sample size against the sample guideline and standard, and confirm the sample size is calculated correctly, and chose in a conservation approach, compared calculated result of sample size. Furthermore, the relative error of the sample results is lower and the statistical quality is sufficient.* *2. Using a central online platform, the PP determined the end users to be included in the sampling using a simple random approach and submits the end users references to the local data collectors.* *3. VVB conducted a random sample following the sample standard during interview call, interview 50 end users who are partial sourced from the sample survey conducted by PP. Based on the result of acceptance sampling, the monitoring records are deemed acceptable.*
2	*Data management and Human errors*	*Low*	*Typographic errors in the spreadsheets and Human error is likely to occur if the monitoring personnel are not trained well or inexperienced in data recording procedures while recording.*	*4. Require the PP to assess all the data again and confirm that no further errors are made.* *5. All the field staff are well trained and required to complete the simulated test and ensure each trainee are qualified to undertaken users' survey* *6. The hand-written survey records are checked and the data are randomly compared with data in database for the consistency.* *7. Data quality controlled by PP, there are certain steps to ensure the data quality and consistency.*

C.2. Consideration of materiality in conducting the verification

Materiality Threshold

The verification is based on the materiality threshold identified in table below:

	Threshold	Related to
☐	**0.5 %**	**Emission reductions or removals for registered GS project activities achieving a total emission reduction or removal equal**

	Threshold	Related to
		to or more than 500,000 tonnes of carbon dioxide equivalent per year[1];
☐	**1 %**	**Emission reductions or removals for registered GS project activities achieving a total emission reduction or removal of between 300,000 and 500,000 tonnes of carbon dioxide equivalent per year;**
☒	**2 %[2]**	**Emission reductions or removals for registered large-scale GS project activities achieving a total emission reduction or removal of 300,000 tonnes of carbon dioxide equivalent per year or less;**
☐	**5 %**	**Emission reductions or removals for registered small-scale GS project activities other than registered GS project activities covered under next category below;**
☐	**10 %**	**Emission reductions or removals for the type of registered GS project activities referred to as microscale project activities**

The errors identified in the project is not related to the changed of the ER values provided in the original MR for VVB verification, thus it is confirmed that 0% isbelow the threshold limit of materiality 2% and hence not material. The GHG emission reductions are calculated without material misstatements.

SECTION D. Means of verification

D.1. Desk review

During the desk review all documents initially provided by the client and publicly available documents relevant for the verification were reviewed. The main documents are listed below:

- the approved 2nd Crediting Period PDD including the monitoring plan/PDD/,
- the approved 2nd Crediting Period GS Passport/GSP/,
- the approved GS 2nd Crediting Period validation report/VAL/,
- The approved GS4GG Transition Annex/TA/.
- documentation of previous verification/VER/,
- the monitoring report, including the claimed emission reductions for the project during this monitoring period/MR/,
- the emission reduction calculation spreadsheet for this monitoring period /XLS/.

All the other supporting documents as listed in Appendix 3 were also reviewed.

D.2. On-site inspection

Duration of on-site inspection[3]:				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
1.	-Sent mail with questionnaire to local expert for call interview with randomly seleted CWP user samples	N/A	30/03/2021	Zhao Xuejiao (Fancy)
2.	-Sent mails to seleted staffs	N/A	31/03/2021	Zhao Xuejiao

[1] A year refers to a period of 12 consecutive months.

[2] The project is registered as small scale originally but in CP1-MP3, it have been upgraded to large-scale, so 2% is selected accordingly.

[3] The verification team did not conducted the site visit as the explanation provided, but the related alternative methods have been used for verification which have been listed in this table.

	in head office			(Fancy)
3.	Opening meeting call - interviewed representatives of PP -discussed the document evidence	N/A	13/04/2021	Zhao Xuejiao (Fancy)
4.	Local expert conducted phone interview with CWP user samples following the questionnaire	N/A	12/04/2021 to 18/04/2021	Sochampawatd (Awatd)
5.	Findings discussion and Close Meeting	N/A	19/04/2021	Zhao Xuejiao (Fancy)

Accoridng to the section 4.1.1 b of COVID 19: INTERIM MEASURES/COV/ issued by GS, if a site visit cannot be postponed due to significant impact of delaying the site visit on project developer due to commitment as per GS-VERs delivery agreement, so VVB replace mandatory on-site visits with remote audits. And the monitoring period is only one year not exceeding the requirement in 4.3.1 of COVID 19: INTERIM MEASURES/COV/ that "The maximum monitoring period that VVB can verify based on remote audit is two years".

Hence the site visit was not conducted by the verification team, and the below alternatives have been conducted by the verification team as remote audit in line with the requirements from COVID 19: INTERIM MEASURES/COV/.

1. The team used video conference call conducting the opening meeting on 13/04/2021 and interviewed representatives of PP, PP introduced the implementation of the project during this monitoring period and VVB discussed the document evidence with the PP based on desk review results.
2. The team randomly seleted staffs in head office of Hydrologic from the staff list/SL/ provided by PP and sent emails on 31/03/2021 with interview questionnaires to get the feedback from the related staffs. Refer to section D.3 for the details of the questionnaire.
3. During desk review, the team randomly seleted CWP user samples from the samples list of the sampling survey conducted by Angkor research and Consulting Ltd. for this monitoring period and prepared the related questionnaires, sent the mail with questionnaire to local expert on 30/03/2021. Local expert[4] conducted phone interview with CWP user samples following the questionnaire provided by TUV NORD from 12/04/2021 to 18/04/2021. And scanned all the filled qustionnaires to team leader. Refer to section D.3 for the details of the questionnaire.
4. During desk review, the team randomly seleted field staffs and factory staffs and prepared the related questionnaires, sent the mail with questionnaires to local expert on 31/03/2021. Local expert conducted phone interview with representatives of field staff and factory staff following the questionnaires provided by TUV NORD on 18/04/2021. And scanned all the filled qustionnaires to team leader. Refer to section D.3 for the details of the questionnaires.
5. The team discussed findings and conducted close meeting via phone call with PP on 19/04/2021.

In conclusion, although the site visit was not conducted by the verification team, through interview call and questionnaires, the requested information for the verification is got by the verification successfully and can be assessed by the verification team to finish the verification.

D.3. Interviews

[4] The local expert has conducted the last two MP verification together with the team leader and questionnaire is similar to the one used for 1st for CP2 periodic verification in last year by local expert and team leader for site interview with the users, hence local expert is familiar with the questionnaires and know how to ask the questions.

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Meng/I1/	Chanvibol	Nexus Carbon for Development /Technical services manager	13/04/2021, 19/04/2021	- General aspects of the project - Changes since validation / previous verifications - Calibration procedures - CWP distribution status - Project database - Sales record - Quality management system - Involved personnel and responsibilities - Training and practice of the operational personnel - Implementation of the monitoring plan - Sampling Plan - Samppling Method - Project survey - Baseline survey - Monitoring data management - Data uncertainty and residual risks - Procedural aspects of the verification - Environmental aspects - Job opportunities - Salary level - Water quality and quantity - Livelihood of the poor - Access to energy service - Monitoring plan - Monitoring training - Emission reduction calculation	Fancy
2.	IM/I1/	Bora	Hydrologic Social Enterprise, Ltd./Carbon Project Manager	13/04/2021, 19/04/2021		Fancy
3.	Phal/I2/	Larch	Hydrologic Social Enterprise, Ltd./ Factory Staff, Smooth	15/04/2021	- CWP Produciton Process - Warranty Card - Environmental aspects - Salary level - Staff Management - Position - Job Description - Salary level - Labor contract - Welfare	Awatd
4.	Sophea /I2/	Ol	Hydrologic Social Enterprise, Ltd./Factory Staff, Mix	16/04/2021		
5.	Dy /I2/	Dul	Hydrologic Social Enterprise, Ltd./	16/04/2021		

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
			Factory Staff, Production Site Controller		- Food allowance - Safety training	
6.	Pak /I2/	Sem	Hydrologic Social Enterprise, Ltd./Factory Staff, Office Asistant	16/04/2021		
7.	Eourn/I2/	Phumint	Hydrologic Social Enterprise, Ltd./Factory Staff, Press	18/04/2021		
8.	Sreylen /I2/	Chhe	Hydrologic Social Enterprise, Ltd./Office Staff, Credit Admin Assistant	06/04/2021		Fancy
9.	Ham/I2/	Soeng Hon	Hydrologic Social Enterprise, Ltd./ Office Staff, Coorporate Sale Coordinator	02/04/2021		
10.	Veasna /I2/	Khoem	Hydrologic Social Enterprise, Ltd./ Office Staff, HR & Admin Assistant	07/04/2021		
11.	Soknalin/I2/	Mao	Hydrologic Social Enterprise, Ltd./ Office Staff, Account Assistant	01/04/2021		
12.	Sythan/I2/	Hang	Hydrologic Social Enterprise, Ltd./ Office Staff, Collection Administration	31/03/2021		
13.	Sam Art/I3/	Khy	Prey Kbong village, Prey Khmeng Commune, Phnom Sruoch District, Kampong Speu/User Unique No-Interview Key: 66-78-85-53	12/04/2021	- CWP Style - Purchase price - Persion/HH - CWP issues for using - After sale service - Warranty card - Air quality change - Water quality - If stop boiling water - Water consumption per day - Wood, Charcoal, LPG consumption	Awatd
14.	Sarourng/I3/	Ung	Bang Na village, Chongruk commune, Kong	12/04/2021		

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
			Pisei district, Kompong Speu province/User 13-29-29-58		- Money Saving - Time Saving - Accessibility to Hydrologic - Any commnets	
15.	Seurn/I3/	Hong	Trapang Pring Khang Tboung village, Trapeang Pring Commune, Tuek Chhou district, Kampot Province/User Unique No-Interview Key: 42-92-66-95	12/04/2021		
16.	Meta/I3/	Va	Bang Na village, Chongruk commune, Kong Pisei district, Kompong Speu province/User 31-51-68-55	12/04/2021		
17.	Thon/I3/	Koy	Samrong Cheurng Phnom village, Saen Dei Commune, Samrong Tong district, Kompong Speu/User 34-84-58-93	12/04/2021		
18.	Sokhom/I3/	Sours	Prey Kbong village, Prey Khmeng Commune, Phnom Sruoch District, Kampong Speu/User 83-91-61-19	12/04/2021		
19.	Mom/I3/	Son	Srae Krou village, Cheang Tong commune, Tram Kok district, Takeo province/User 01-14-29-71	12/04/2021		
20.	Pros/I3/	Sang	Srae Chrov village, Lbaek commune, Chhouk district, Kamport province/User 16-02-21-76	12/04/2021		
21.	Sreylak/I3/	Air	Bang Na village, Chongruk commune, Kong Pisei district,	13/04/2021		

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
			Kompong Speu province/User 03-44-12-93			
22.	Nang/I3/	Kaet	Chrak Preal village, Pheakdei commune, Baseth district, Kampong Speu province/User 19-12-73-33	13/04/2021		
23.	Chanthorn /I3/	Mean	Trapaeng Vihear village, Cheurng Kor communice, Samrong district, Takeo province/User 68-85-56-87	13/04/2021		
24.	Srey Bo/I3/	Kou	Srae Krou village, Cheang Tong commune, Tram Kok district, Takeo province/User 62-65-50-56	13/04/2021		
25.	Phorn /I3/	Mann	Samrong Cheurng Phnom village, Saen Dei Commune, Samrong Tong district, Kompong Speu/User 80-36-78-12	13/04/2021		
26.	Sophal/I3/	Oum	Ta Reab village, Cheang Tong commune, Tram Kak district, Takeo province/User 29-16-34-36	13/04/2021		
27.	Ra/I3/	Men	Samrong Cheurng Phnom village, Saen Dei Commune, Samrong Tong district, Kompong Speu/User 90-20-67-23	13/04/2021		
28.	Som Onn/I3/	Chhel	Trakiet village, Champei commune, Bati district, Takeo province/User 63-85-01-87	13/04/2021		
29.	Ya/I3/	Chhum	Srae Krou village, Cheang Tong commune,	13/04/2021		

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
			Tram Kok district, Takeo province/User 52-74-35-90			
30.	Boravy/I3/	Voeurn	Srae Chrov village, Lbaek commune, Chhouk district, Kamport province/User 27-63-06-74	13/04/2021		
31.	Channy/I3/	Nin	Kbal Thnal village, Kampong Prieng commune, Sangkae district, Battambang province/User 87-79-55-36	13/04/2021		
32.	Chhork/I3/	Kem	Srae Chrov village, Lbaek commune, Chhouk district, Kamport province/User 61-68-19-24	13/04/2021		
33.	Samnang/I3/	En	Krang Traok village, Kak commune, Baseth district, Kampong Speu province/User 78-63-00-12	13/04/2021		
34.	Sok/I3/	Som	Srae Chrov village, Lbaek commune, Chhouk district, Kamport province/User 75-94-04-36	13/04/2021		
35.	Khemera/I3/	Rourn	Angkonh village, Khvav commune, Samrong district, Takeo province/User 54-27-89-77	13/04/2021		
36.	Choeurn /I3/	Soy	Angkonh village, Khvav commune, Samrong district, Takeo province/User 93-15-17-43	14/04/2021		
37.	Saman/I3/	Mean	Trapang Mnos village, Dang Dong commune, Dang Dong	14/04/2021		

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
			district, Kamport province/User 34-00-40-11			
38.	Narin/I3/	Doeurn	Samrong Cheurng Phnom village, Saen Dei Commune, Samrong Tong district, Kompong Speu/User 93-01-41-02	14/04/2021		
39.	Nang/I3/	Sam	Angkonh village, Khvav commune, Samrong district, Takeo province/User 49-30-56-58	14/04/2021		
40.	Syty/I3/	Kop	Samrong Cheurng Phnom village, Saen Dei Commune, Samrong Tong district, Kompong Speu/User 61-45-21-91	14/04/2021		
41.	Ya/I3/	Soun	Srae Krou village, Cheang Tong commune, Tram Kok district, Takeo province/User 88-50-91-71	14/04/2021		
42.	Horn /I3/	Nil	Prey Kbong village, Prey Khmeng Commune, Phnom Sruoch District, Kampong Speu/User 21-77-57-45	14/04/2021		
43.	Norn/I3/	Hem	Ta Reab village, Cheang Tong commune, Tram Kak district, Takeo province/User 09-44-96-44	14/04/2021		
44.	Mao/I3/	Prak	Prey Kbong village, Prey Khmeng Commune, Phnom Sruoch District, Kampong	14/04/2021		

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
			Speu/User 90-85-85-00			
45.	Thoeun	Phoung	Srae Krou village, Cheang Tong commune, Tram Kok district, Takeo province/User 57-01-49-94	15/04/2021		
46.	Khon	Sam	Angkonh village, Khvav commune, Samrong district, Takeo province/User 60-44-98-15	15/04/2021		
47.	Sro Em	Piny	Kbal Thnal village, Kampong Prieng commune, Sangkae district, Battambang province/User 56-78-78-71	15/04/2021		
48.	Kannha	Chov	Kbal Thnal village, Kampong Prieng commune, Sangkae district, Battambang province/User 93-53-88-51	15/04/2021		
49.	Deurn	You	Krang Traok village, Kak commune, Baseth district, Kampong Speu province/User 27-69-94-88	15/04/2021		
50.	Lai Ky	Khorn	Kamrieng village, Kamrieng Commune, Kamrieng District, Battambang province/User 09-39-63-41	15/04/2021		
51.	Sarun	Hun	Preah Ponlea village, Rung Chey commune, Thmor Kol district, Battambang province/User 74-53-71-12	16/04/2021		
52.	Pheach	Chek	Sahakum Khang Laech village,	16/04/2021		

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
			Preakdei commune, Baseth district, Kampong Speu province/User 11-65-21-92			
53.	Sinan	Phok	Samrong Cheurng Phnom village, Saen Dei Commune, Samrong Tong district, Kompong Speu/User 07-49-10-13	16/04/2021		
54.	Sophea	Yi	Krang Traok village, Kak commune, Baseth district, Kampong Speu province/User 12-91-45-32	16/04/2021		
55.	Kunthea	Sari	Trapang Mnos village, Dang Dong commune, Dang Dong district, Kamport province/User 82-05-20-41	16/04/2021		
56.	Saram	Oeung	Prakeab villge, Rung Chey commune, Thmor Kol district, Battambang province/User 21-88-27-61	16/04/2021		
57.	Koun	Nim	Prakeab villge, Rung Chey commune, Thmor Kol district, Battambang province/User 17-62-55-59	16/04/2021		
58.	Phay	Sem	Preah Ponlea village, Rung Chey commune, Thmor Kol district, Battambang province/User 05-14-83-05	16/04/2021		
59.	Pov	Chao	Prey Thom Village, Khlaeng Meas commune, Bavel district, Battambang	16/04/2021		

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
			province/User 52-23-28-22			
60.	Kroch	Soam	Trapang Mnos village, Dang Dong commune, Dang Dong district, Kamport province/User 96-81-21-02	16/04/2021		
61.	Rith	Sang	Srae Chrov village, Lbaek commune, Chhouk district, Kamport province/User 55-84-22-54	16/04/2021		
62.	Neng	Song	Trapang Mnos village, Dang Dong commune, Dang Dong district, Kamport province/User 28-95-56-22	16/04/2021		

The questions in the questionnaires asked were basically based on requirements of GS4GG/GSPR/. The main topics included, but not limited to, the followings:

For end users,

1. General information of CWP users
    a. CWP serial No.
    b. CWP style
    c. Purchase cost
    d. Household location
    e. Interviewee Name
    f. People No. in the Household
    g. Use CWP every day or not
2. SD and co-benefits for the 3rd monitoring period for CP2
    h. If Air quality was better comparing with past after using CWP
    i. If Water quality was good for drink after using CWP
    j. If Money was saved after using CWP
    k. If time was saved after using CWP, if yes, saving time for what purpose
3. Fuel using
    l. Wood consumption before and after using CWP
    m. Charcoal consumption before and after using CWP
    n. LPG consumption before and after using CWP
4. After sale service
    o. Warranty card used or not

p. CWP using issues, any replacement

q. Accessibility to Hydrologic

5. Have you alrady attended the survey in 2020 conducted by third party?
6. any comments?

For the staff,

- Job Description - Title, Rank, Department, Main function
- Salary - Salary level, Satisfied, Labor contract
- Welfare – Insurrance, Retirement Package, Payment Leave, Sick pay, Food allowance, Safety training, Safety measurements, Phone card allowance, Fuel allowance

The feedback from Household interviewees are listed as below:

1. General information of CWP users

   All the Household provided the general information of the CWP and family.

   The price for Super tunsai is confirmed as same to the PP survey data,

   The average people No. in Household is 5.28 which is higher than the value in MR and confirmed as conservative,

   All the Household confirmed used CWP everyday except the replacement.

2. SD

   All the Households used to boiling the water confirmed that the Air quality was better comparing with past after using CWP

   All the Households confirmed that the water quality is good for healthy.

   All the Households confirmed that the money was saved after using CWP.

   All the Households confirmed that the time was saved after using CWP and all confirmed save time from boiling and collecting and purchasing fuel.

3. Fuel saving

   All the Households used to boiling the water confirmed that they consumed less fuel (wood, charcoal, LPG) than baseline.

4. After sale

   All the Household hold the warranty card, and 3 Households have changed the tap, ceramic filter or pot. The access to Hydrologic method, i.e. Hotline are listed in the warranty card.

5. All the 50 HH confirmed that they attended the sampling survey in Dec. 2020, which is same to the sampling selection number by verification team.
6. No more comments from Households.

The feedback from staff interviewees are listed as below:

All the staff gave their name, age, job title to verification team and all the staff satisfied with their salary and signed the labor contract voluntarily. And all the staff confirmed the welfare including Insurrance, Retirement Package, Payment Leave, Sick pay, Food allowance, Safety training, Safety measurements, Phone card allowance, Fuel allowance are given by the company and the value is same to the MR.

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

D.4. Sampling approach

D.4.1. Sampling during monitoring

☐	No sampling approach has been used by the PP to determine the monitored parameters
☒	A sampling approach has been taken for the following monitored parameter(s):

Parameter	Sampling approach [1)]	Sampling Type [2)]	Population	Sample Size
$Q_{P,y}$	CS and SiRS	PS	113,609[5]	140/SNC/
$Q_{P,rawboil,y}$	CS and SiRS	PS	113,609	140/SNC/
$Q_{P,cleanboil,y}$	CS and SiRS	PS	113,609	140/SNC/
$WQ_{Passed,y}$	CS, MSS and SiRS	PS	113,609	180 (45 for each round and total 4 round)/WQTR/
$U_{p,y}$	CS and SiRS	PS	113,609	185/SP/, /MSR/
$N_{p,y}$	CS and SiRS	PS	113,609	140/SNC/
$W_{b,y,TRAD,wood}$	CS and SiRS	PS	126,823	140/SNC-MP1/
$W_{p,y,TRAD,wood}$	CS and SiRS	PS	126,823	140/SNC-MP1/
$W_{b,y,TRAD,charcoal}$	CS and SiRS	PS	126,823	140/SNC-MP1/
$W_{p,y,TRAD,charcoal}$	CS and SiRS	PS	126,823	140/SNC-MP1/
$W_{b,y,IMP,Wood}$	CS and SiRS	PS	126,823	140/SNC-MP1/
$W_{p,y,IMP,Wood}$	CS and SiRS	PS	126,823	140/SNC-MP1/
$W_{b,y,IMP,charcoal}$	CS and SiRS	PS	126,823	140/SNC-MP1/
$W_{p,y,IMP,charcoal}$	CS and SiRS	PS	126,823	140/SNC-MP1/
$W_{b,y,LPG(small)}$	CS and SiRS	PS	126,823	140/SNC-MP1/
$W_{p,y,LPG(small)}$	CS and SiRS	PS	126,823	140/SNC-MP1/
$W_{b,y,LPG(large)}$	CS and SiRS	PS	126,823	140/SNC-MP1/
$W_{p,y,LPG(large)}$	CS and SiRS	PS	126,823	140/SNC-MP1/

[1)] *Sampling Approaches:*

SiRS: *Simple Random Sampling*
StRS: *Stratified Random Sampling*
SS: *Systematic Sampling*
CS: *Cluster Sampling*
MSS: *Multi-stage Sampling*

[2)] *Sampling Types:*

PS: *Parameter Sampling*

Sampling design

The sampling design carried out by the project is demonstrated as below:

In this monitoring period, Angkor Research conducted the monitoring survey and field test including usage survey, project survey and water consumption field test/MSR/, which is verified as in line with the requirement in the PDD monitoring plan/PDD/ and methodology requirement/TPDDTEC/. This means that four volumetric variables including $Q_{P,y}$, $Q_{P,rawboil,y}$, $Q_{P,cleanboil,y}$ and $N_{p,y}$ are updated since last monitoring period.

[5] 113,609 population is used but not the total end users number because PP can't collect the information from all the users and some users were excluding due to retirement age, this is cross-checked with the project database for this MP.

For Baseline Water Boiling test (BWBT), via the conducted project survey result/MSR/, it is verified that there is no change for water boiling technologies from that of the baseline: wood and charcoal with traditional cookstove and or improved cookstove; and LPG with LPG stove. Thus, BWBT is not updated in this MP, which is confirmed as reasonable and line with the PDD monitoring plan/PDD/ and methodology requirement/TPDDTEC/. This means that monitored parameters including $W_{b,y,TRAD,wood}$, $W_{p,y,TRAD,wood}$, $W_{b,y,TRAD,charcoal}$, $W_{p,y,TRAD,charcoal}$, $W_{b,y,IMP,Wood}$, $W_{p,y,IMP,Wood}$, $W_{b,y,IMP,charcoal}$, $W_{p,y,IMP,charcoal}$, $W_{b,y,LPG(small)}$, $W_{p,y,LPG(small)}$, $W_{b,y,LPG(large)}$, $W_{p,y,LPG(large)}$, $W_{b,y,WEIGHTED,wood}$, $W_{b,y,WEIGHTED,charcoal}$ *and* $W_{b,y,WEIGHTED,LPG}$ are same to the last monitoring period which has been verified in the last MP and therefore no need to be re-assessed in this MP.

Hence during this MP, Angkor Research conducted the monitoring survey including usage survey, project survey and water consumption field test in Dec. 2020 to accurately calculate the monitoring parameters outlined in the Project Design Document/PDD/ and GS4GG transition Annex/TA/ approved by GS on 30/10/2019/TRFA/ besides the parameters derived from the BWBT.

The monitoring flow/MF/, sampling protocol for this MP/SP/ and monitoring survey report/MSR/ are verified by the verification team, it is confirmed that the sample size determination for project survey and usage survey is in line with the methodology requirement/TPDDTEC/.

The Project Proponent has employed a cluster-based, random sample selection methodology to ensure the final sample selected for each study was representative while optimizing fieldwork efficiency. The sample was clustered at the provincial, village, and household level. Via checking the sampling method as stated in sampling protocol for this MP/SP/ and monitoring survey report/MSR/, it is verified that the method is in line with the PDD sampling plan/PDD/ and methodology requirement/TPDDTEC/.

C.4.2 Sampling approaches during verification

☐	No sampling approach has been used by the VT to verify the monitored parameters
☒	A sampling approach has been applied by the VT for the following monitored parameter(s):

Parameter	Sampling approach [1)]	Sampling Type [2)]	Population	Sample Size
$Q_{P,y}$	SiRS	AS	140	50
$Q_{P,rawboil,y}$	SiRS	AS	140	50
$Q_{P,cleanboil,y}$	SiRS	AS	140	50
$WQ_{Passed,y}$	-	COM	180 (45 for each round and total 4 round)/WQTR/	all
$U_{p,y}$	SiRS	AS	185	50
$N_{p,y}$	SiRS	AS	140	50
$T_{p,y}$	SiRS	PS	33,746[6]	60

[1)] *Sampling Approaches:*

SiRS: Simple Random Sampling
StRS: Stratified Random Sampling
SS: Systematic Sampling
CS: Cluster Sampling
MSS: Multi-stage Sampling

[2)] *Sampling Types:*

AS: Acceptance Sampling
PS: Parameter Sampling
COM: Full data check at higher data aggregation levels and sampling at original data levels

[6] This value is the sale CWP during this monitoring period. Based on the previous verification, it is confirmed that the previous sale data has been verified during the periodic verifications, so only the new data records need to the checked in this verification to confirm if 33,746 is correct.

1) Verifier's Action

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

For parameter $T_{p,y}$, to verify the accuracy and correctness of monitored data, verification team has utilized sampling approach as per the "Guideline of Sampling and surveys for CDM project activities and programmes of activities" version 04.0/SSG/, this sampling approach found to be appropriate as the sales record and invoices are homogenous.

As per the paragraph 12 of 2.1.1 section of the guideline states that the Sample size calculation by Simple Random Sampling can be done using following formulae:

$$n \geq \frac{1.645^2 N \times p(1-p)}{(N-1)\times 0.1^2 \times p^2 + 1.645^2 p(1-p)}$$

Where

n	Sample size
N	Total number of sales invoices
P	Our expected proportion
1.645	Represents the 90% confidence required
0.1	Represents the 10% relative precision (0.1 × 0.5 = 0.05 = 5% points either side of p)

N is 33,746 as determined in the sales record/SR/, P is determined as 90%, as per the level of confidence, VVB expects that 90% of the samples taken shall comply with the project requirements.

Hence the *n* is calculated as 1.645^2*33,746*0.9*(1-0.9)/{(33,746-1)*0.1^2*0.9^2+1.645^2*0.9*(1-0.9)}=31. Hence, the verification team randomly selected 60 (5 per month) invoice reference numbers from the sales record/SR/ and checked related sales invoices/SICWP/ which is more than 31 sample size requirement during this monitoring period, the invoices are cross checked with the sales record/SR/, it is verified that the sales record during this monitoring period is correct with the sales invoices sample. Hence, it is concluded that the $T_{p,y}$ value during this monitoring period of 33,746 is correct and credible.

For parameter $WQ_{Passed,y}$, to verify the accuracy and correctness of monitored data, verification team has checked all the samples from PP original data, so 180(45 for each round and total 4 round)/WQTR/ were checked by verification team and it is verified that all the 180 Water Quality test results are consistent with the PP data and final calcualtion result average percentage of 90% is verified as correct and credible based on the sample results conducted on quarterly base. For the sampling survey for parameter $WQ_{Passed,y}$, it is verified that PP followed 90/10 precision rule which means the result of the test for samples is meeting this precision.

For the project and usage survey, the samples are selected based on the methodology request, sampling rules at least 100 sample for project/usage survey, and at least 30 sample per age group, and no precision on its result.

For parameters $Q_{P,y}$, $Q_{P,rawboil,y}$, $Q_{P,cleanboil,y}$, $U_{p,y}$, $N_{p,y}$, verification team made the sampling plan for visiting households during this verification using Simple random Sampling approach as specified in the "Sampling and Surveys for CDM Project Activities and Programme of Activities" version 08.0/SSS/ with the following steps,

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

In order to determine the size of the sample household for remote verification interview 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/SSS/.

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"/SSS/:

(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"/SSS/. To be more conservative, verification team randomly selected 50 from the PP's sample records/PD/.

Took a random sample selection of the PP's sample records/MSR/ using the excel function, and Local Expert conducted the interview call of the 50 CWP users sampled by the verifier by filling with the questionnaires.

(b) 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/MSR/ is found to be consistent with the 50 samples selected by verification team from the sampling conducted by the PP. Also, no discrepancy is found between the sample records/MSR/ and the VVB sample records.

(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/MSR/ is accepted as per "Sampling and Surveys for CDM Project Activities and Programme of Activities"/SSS/.

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)	-	CAR 01	-
Remaining forward action requests from validation and/or previous verification (E.2)	-	-	-
Compliance of the project implementation with the registered project design document (E.3)	CL 01	CAR 02	-
Post-registration changes (E.4)	-	-	-
Compliance of the monitoring system applied by the project with the registered monitoring plan (E.5)	-	CAR 03	-
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)	-	1	-
SDG Data and parameters monitored (E.6.2)	CL 02 CL 03	CAR 04 CAR 05 CAR 06	-
Compliance of the sampling implementation with the registered sampling plan (E.6.3)	CL 04	-	-
Compliance with the calibration frequency requirements for measuring instruments (E.7)	-	-	-
Assessment of data and calculation of SDG impacts (E.8)	-		
Calculation of baseline value or estimation of baseline situation of each SDG impact (E.8.1)	-	CAR 07	-
Calculation of project value or estimation of project situation of each SDG impact (E.8.2)	-	CAR 08	-
Calculation of net benefits as difference of baseline and project values or direct calculation for each SDG impact (E.8.3)	-	CAR 09	-

Summary of ex-post values of each SDG impact for the current monitoring period (E.8.4)	-	CAR 10	-
Comparison of actual value of outcomes with estimates in approved PDD (E.8.5)	-	-	FAR 01
Remarks on difference from estimated value in approved PDD (E.8.6)	-	CAR 11	-
Stakeholder inputs and legal disputes (E.9)	CL 05	-	-
Others (please specify)	-	-	-
Total	**5**	**11**	**1**

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/MRT/. Further every section has been checked against the GS4GG Principles& Requirements/GSPR/. Via checking the sales record/SR/ and call interview with end users, it is confirmed that the project involves production and distribution of Ceramic water Purifiers (CWP) in Cambodia/PHT/. Access to potable water in Cambodia (Host country) in villages is a common problem and people living in villages are boiling the available water (i.e. ponds, dug wells, bore wells) for drinking and cooking purpose (for safe consumption purpose). While boiling water, people use various fuels i.e. forest wood, LPG and coal which has been verifiedby call interview with CWP users. The objective of the project is to reduce / eliminate the water boiling practice and thereby reduce the CO_2 emissions due to usage of fossil fuel. Hydrologic Enterprise Ltd. is producing a ceramic filter from the clay locally available to filter the water. This is the well-known ancient technology and is improvised by Hydrologic to enhance the filtration rate. Hydrologic has a full-fledged factory situated in Trapeang Samrong Village/BL/, where these filters are produced utilising local skilled and unskilled workers. By implementing the project Hydrologic has provided an opportunitiy for local community to generate steady and continual income for their livelihood. The project is applicable to the applied methodology of "Technologies and Practices to Displace Decentralized Thermal Energy Consumption, version 3.0 - July 2015". The starting date of operation of the project activity was 01/12/2010, when production of CWPs for the crediting period began which has been confirmed in the PDD and validation report/VAL/,/PDD/. The project was registered as a GS-VER project on 08/08/2012 with the registration number of GS1020. According to the approved 2nd Crediting Period Validation Report report/VAL/ and previous verification report/VER/, the project participant has adopted for the renewble crediting period of 21 years with the start date of 2nd crediting period of 01/12/2017. As part of the remote verification, the Verification Team was able to confirm that the project description in MR is in accordance with the project description contained in the approved 2nd crediting period PDD. The following sources of information have been used in this context: • /MR/ • /GSPR/ • /MRT/

Findings	☒	The respective requirements have widely been complied with; however; the following issues needed to be addressed in this context:
		- CAR 01
Conclusion	☐	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	☒	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	A draft monitoring report was submitted to the verification team by the project participants. It can be confirmed that the Monitoring report is complete and transparent and in accordance with the approved 2nd Crediting Period PDD and Global Goals Monitoring report Template version 1.1 in October 2020/MRT/. Refer to the below sections for details.	

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

During the validation the validating VVB might have raised issues that could not be closed or resolved during the validation stage. For this purpose FARs might have been raised. Likewise FARs might have been raised in the course of previous verifications.
In the course of this verification the approved 2nd Crediting Period PDD/PDD/ and the previous verification report /VER/, where applicable, have been checked in order to identify any remaining forward action requests. For the current monitoring period the following applies:

(i) Open issues from validation:

☒	There were no open issues which have been addressed in the latest version of the validation report.
☐	All open issues from the validation have been appropriately addressed in the context of previous verifications.
☐	All issues related to the validation have been appropriately addressed in the course of the current monitoring period (for details please refer to Appendix 4)
☐	The following issues related to the validation have **not** yet been appropriately addressed (for details please refer to Appendix 4):
	- N/A

(ii) Open issues from previous verifications:

☐	N/A – as this is the first monitoring period for this GS project activity.
☒	There were no open issues which have been addressed in the previous verification report
☐	All issues related to the previous verification have been appropriately addressed in the course of the current monitoring period (for details please refer to Appendix 4)
☐	The following issues related to the previous verification have **not** yet been appropriately addressed (for details please refer to Appendix 4):
	- N/A

(iii) Open issues from GS:

☐	There were no open issues in the GS review or GS prior approval for deviation which have been addressed
☒	There were open issues in the GS review or GS prior approval for deviation which have been addressed as follow,
1.	**FAR #1** from GS issuance review for MP3/GSIR/ According to the registered PDD "The ceramic filter element has an average lifespan of two years or more. Lifespan depends on the quality of the input water and the care taken to avoid breakage. "The PP is requested to provide details on number of ceramic filter element replaced (age group wise) in next monitoring period.

	VVB Assessment: First, PP has tracked the replacement of ceramic filter element (age group wise) and has incorporated the details in a replacement report/CPRR/ (age group wise) in this monitoring period. Via checking the replacement report/CPRR/, it is verified that the replacement was mainly carried out for Pots and for spigots (tap) during this MP. The replacement rate is calculated as 1.04% of the cumulative units credited as of 31/12/2020 which is verified as correct by checking the information in replacement report/CPRR/.
2.	**FAR #2** from GS issuance review for MP3/GSIR/ The PP shall improve the sale data collection system to avoid any duplicate in next monitoring period. More trainings shall be provided to database implementer.
	VVB Assessment: The correctness of formula established by PP for effectiveness in identifying the duplicate entry in the sales database has been verified by the verification team, it is found that a combine function of IF and COUNTIFS to check if there is any duplicated user, both the name and address of users are identified as conditions to find if name duplicated, only name and address are both same, it can be deemed as a duplication, otherwise, it is not. Hence, by checking the project database/PD/, it is confirmed that the correct formula in the Spreadsheet is providing correct outcome and hence it is possible to check if there is any duplicate entry in the data base. Furthermore, PP has invited a carbon consultant from Nexus to conduct a database refreshing training to their customer service team and database implementer in Oct. 2020, via checking the training records/TRA/, it is verified that the related training was provided during this MP. Via using the function by verification team, it is concluded that there is no any duplication entries in the project database/PD/.

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 2nd CP approved PDD in its latest version form – as downloaded from the GS project site - and the checks carried out during the remote verification an assessment has been carried out whether the project has been implemented and operated in line with the approved 2nd Crediting Period 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 conference call with PP and local expert conducted interview calls with end users and staffs, in addition by all the provided evidence, it is found that the project has been put into operation and Ceramic Water Purifiers (CWP) are being distributed and it is found that the implementation of the project activity is in accordance with the approved 2nd Crediting Period PDD. 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. PP has provided justifications for the changes and these changes are accounted correctly while calculating emission reductions/XLS/. Hydrologic Social Enterprise Ltd. has so far distributed 452,251 units of ceramic filters in different provinces of host country, and 33,746 units during this monitoring period from 01/01/2020 to 31/12/2020, which is verified by checking the sales record/SR/ and project database/PD/. The emission reductions achieved during this monitoring period are 93,878 tCO_2e/XLS/. The details of verification against changes incorporated by PP during this monitoring period are provided in the respective sections and there is no significant change observed in the listed monitoring parameters since last verification. Hydrologic has introduced two models as given below along with the specifications/CWPS/. PP has provided detailed specifications along with pictures of CWP's in the PDD section A.3. Verification team herewith confirms that the specifications of Ceramic water Purifiers (CWP) are the same as provided in the PDD and MR.

	Furthermore, based on the project design in the PDD, it is verified that no classification for the two models is needed for emission reduction calculation, only one size of product is considered due to the two types having the same characteristic with the only difference being the size of the receptacle and the physical appearance which does not result in different performance, which has been confirmed by checking the CWP specifications for two models and previous on-site inspection of the CWP production plant. This is the 3rd monitoring period of 2nd crediting period and the verification team herewith confirms that the project implementation is consistent since the start date of 3rd MP is continuous with the ending date of 2nd MP/VER/. There are no major obstructions or gaps noted during this monitoring period. After 2nd verification of 1st crediting period/VER/, the project has undergone a design change and it is noted that the scale of project is shifted to Large scale since the project has crossed the threshold limit of energy saving per annum i.e. 180 GWh / Annum. PP has obtained an approval from gold standard. As per the approved 2nd Crediting Period PDD, it is noted that the emission reductions are calculated on the basis of the sales of numbers of units of Ceramic Water Purifiers, hence it is considered as an important parameter for calculation of Emission reductions during particular monitoring period. PP has an effective system to keep a track of manufactured number of Ceramic Water filters through unique serial number/SNCWP/ and sales records/SR/. PP has established adequate QA/QC methods and reporting structure to capture relevant information in transparent manner. The data collected and processed is found auditable. The actual production and dissemination method is found in accordance with the descriptions provided in the Approved 2nd Crediting Period PDD. There is no deviation / change evidenced during this monitoring period. The following sources of information have been used in this context: • /PDD/ • /PD/ • /MR/ • /GSPR/ • /XLS/ • /SNCWP/ • /SR/ • /VER/	
Findings	☐	The project has been implemented as described in the latest version of the PDD as well as in section 2 of the monitoring report. No deviations thereof have been identified in the course of this verification.
	☐	The following deviations from the registered / approved project design and or the project description in the MR have been identified in the course of this verification (for further details please refer to section D.4): - N/A
	☒	In this context the following CARs, CLs have been raised: - CAR 02, CL 01
Conclusion	☐	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	☒	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	During the verification a site visit was exempted. On the basis of conference call and call interview and reviewed project documentation, it can be confirmed that w.r.t. the realized technology, the project CWP, as well as the monitoring equipment, the project has been implemented and operated as described in the approved 2nd Crediting Period PDD.	

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

It has been checked whether any temporary deviations have been applied during this monitoring period. The result is summarized in the table below.

☒	No temporary deviations have been submitted to the GS-TAC prior to the current monitoring period.		
☐	The following temporary deviations have been approved or are under approval by the GS-TAC		
	1	Title	
		Status	☐ under approval; ☐ approved (approval No.:)
		Appr.date	
		Ref. No.	
☒	During the verification of the current MP no need for a temporary deviation has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA		
☐	If identified, provide a description of the deviation(s). Include the reasons for the deviation(s), how it deviates from the monitoring plan, applied methodology(ies) and/or applied approaches, the duration for which the deviation(s) is(are) applicable and justification on the conservativeness of the approach. Also indicate if prior approval from GS-TAC have been sought on the deviation.		
	1	Issue:	
	2	Issue:	

E.4.2. Corrections

It has been checked whether any corrections to project information or parameters fixed at validation have been applied during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

☒	During the verification of the current MP no need for corrections has been identified.		
☐	The following corrections have been applied:		
	1	Issue:	
	The PDD has been revised accordingly: (New) version No.: Revision date: XX/XX/XXXX		
	It is confirmed that the updated / corrected information is an accurate reflection of the actual project information and that the corrected parameters are in accordance with the applied methodology and the monitoring plan.		
	☐ A related post registration change has been submitted prior to the issuance request. The approval has been received on XX/XX/XXXX ☐ A related post registration change is submitted along with this issuance request. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.		

E.4.3. Changes to start date of crediting period

It has been checked whether any changes to the start date of the crediting period have been approved by Gold Standard that is relevant for this monitoring period

☒	N/A - as this is not the first verification within the crediting period
☐	The PPs do not intend to change the start date of the crediting period.
☐	The PPs intend to change the start date of the crediting period.
☐	The approval to change the start date of the crediting period has been approved by Gold Standard.

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

It has been checked whether any permanent changes from the registered monitoring plan (PCfrMP) or applied methodologies (PCfMM) including standardized baselines (PCfSB) have been approved prior or during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

☒	No PCfrMP, PCfMM or PCfSB have been submitted to GS-TAC prior to the current monitoring period		
☐	The following PCfrMP, PCfMM or PCfSB have been approved or are under approval by GS-TAC		
	1	Title	Revised Monitoring Plan
		Status	☐ under approval; ☐ approved
		Appr.date	
		Ref. No.	N/A
☒	During the verification of the current MP no need for a PCfrMP, PCfMM or PCfSB has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA		
☐	An approval of the following PCfrMP, PCfMM or PCfSB is to be requested from the GS-TAC for the current MP		
	1	Issue:	
	2	Issue:	

E.4.5. Changes to project design of approved project

It has been checked whether any changes to the project design (CoPD) have been approved by GS-TAC prior or during this monitoring period. The result is summarized in the table below.

☐	No CoPD has been submitted to the GS prior to the current monitoring period		
☒	The following CoPD have been approved or are under approval by GS-TAC		
	1	Title	After 2nd verification of 1st crediting period, the project has undergone a design change and it is noted that the scale of project is shifted to Large scale since the project has crossed the threshold limit of energy saving per annum i.e. 180 GWh / Annum. PP has obtained an approval from gold standard/DCR/.
		Status	☐ under approval; ☒ approved
		Appr.date	27/03/2014/DCR/
		Ref. No.	N/A
☒	During the verification of the current MP no need for a CoPD has been identified. The monitoring plan is in accordance with the approved methodology applied by the project activity		

☐	An approval of the following CoPD is to be requested from GS-TAC for the current MP		
	1	Issue:	
	2	Issue:	

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 (i) the applied GS methodology and (ii) all applicable GS guidelines the verification team has checked whether the MP is in compliance with the MP related requirements of the applied methodology. The monitoring system applied by the project compliance with the registered monitoring plan is demonstrated as below: **Project Surveys (PS)** The safe water project survey is conducted with end-users representative of the project scenario target population and currently using the safe water project technology. The project survey was carried out using representative and random sampling following the GS guidelines for minimum sample size 100 due to the number of units sold was greater than 1,000. End users for the project survey was selected using representative sampling techniques to ensure adequate representation of users with technologies of different ages. Common sampling approaches such as clustered random sampling was used. End users can be surveyed at any time(s) throughout the year with care taken to collect information pertaining to seasonal variations in technology and fuel use patterns. Via checking the sampling protocol, it is confirmed that the sample size for project survey was determined as 161 which is higher than 100. The project survey was conducted in December 2020 together with usage survey and water consumption field test participants that are currently using the project technology for this monitoring period. **Water Consumption Field Test (WCFT)** In this monitoring period, Water Consumption Field Test (WCFT) was conducted in December 2020 together with usage survey and proejct survey. The Water Consumption Field Test (WCFT) measures the project-supplied clean water consumption volumes and boiling. The WCFT is conducted with end-users representative of project scenario target population and currently using the CWP. The WCFT is verified as in line with the requirement in the PDD sampling plan/PDD/ and methodology requirement/TPDDTEC/. This means that three volumetric variables including $Q_{P,y}$, $Q_{P,rawboil,y}$, $Q_{P,cleanboil,y}$ and $N_{p,y}$ are measured by WCFT. PP took a sample number of 137 for water consumption filed test which is in line wih the 90/10 rule as defined in the sample number calculation/SNC/, and the margin of error at 90% level of confidence is less than 10%. Via checking the sampling method as stated in the monitoring survey report/MSR/, it is verified that the method is in line with the PDD sampling plan/PDD/, methodology requirement/TPDDTEC/ and GS rules/GST/. **Baseline Water Boiling test (BWBT)** In this monitoring period, for Baseline Water Boiling test (BWBT), via checking the conducted project survey result/MSR/, it is verified that there is no change for water boiling technologies from that of the baseline: wood and charcoal with traditional cookstove and or improved cookstove; and LPG with LPG stove. Thus, BWBT is not updated in this MP, which is confirmed as

	reasonable and line with the PDD sampling plan/PDD/ and methodology requirement/TPDDTEC/. This means that monitored parameters including $W_{b,y}$ and $W_{p,y,}$ are same to the 2nd monitoring period in CP2 which has been verified in the 2nd monitoring period in CP2 and no need to be re-assessed in this MP. **Ongoing Monitoring Studies: Usage rates, leakage, water quality and Hygiene survey** **i. Usage rates** During this MP, Angkor Research conducted the monitoring survey including usage survey and project survey in December 2020 to accurately calculate the monitoring parameters outlined in the Project Design Document/PDD/ and GS4GG transition Annex/TA/ approved by GS on 30/10/2019/TRFA/ besides the parameters derived from the WCFT and BWBT. The sampling protocol for this MP/SP/ and monitoring survey report/MSR/ are verified by the verification team, it is confirmed that the sample size determination for usage survey (total 185 and each age is more than 30) is in line with the methodology requirement that "the minimum total sample size is 100, with at least 30 samples for project technologies of each age being credited"/TPDDTEC/. PP has employed a cluster-based, random sample selection methodology to ensure the final sample selected for each study was representative while optimizing fieldwork efficiency. The sample was clustered at the provincial, village, and household level. Via checking the sampling method as stated in sampling protocol for this MP/SP/ and monitoring survey report/MSR/, it is verified that the method is in line with the PDD sampling plan/PDD/ and methodology requirement/TPDDTEC/. The usage survey was conducted in December 2020 together with project survey and water consumption field test participants that are currently using the project technology for this monitoring period. **ii. Leakage** As per the Gold Standard Methodology "Technologies and Practices to Displace Decentralized Thermal Energy Consumption – version 3.0, July 2015", it is required to account the leakage emissions, in case project activity is using any fossil fuel during the Project Scenario. In accordance with this requirement PP has accounted consumption of fire wood and diesel and gasoline. The input for calculating Leakage emissions are taken from the wood&diesel&gasoline purchase records/WDP/ and it is found in accordance with the Monitoring plan. **iii. Water quality testing** PP conducted the water quality test quarterly in March 2020, June 2020, Sep 2020 and December 2020 for this monitoring period. PP took a sample number 180 (45 for each round and total 4 round)/WQTR/ for water quality test which is in line wih the 90/10 rule as defined in the water quality protocol/WQTP/. The sampling ensures at least a 90% confidence level and a 10% margin of error (±10%) in the results. It is verified that all the sample number is above the minimum number (35 for each round). Via checking the sampling method as stated in the water quality test protocol/WQTP/, it is verified that the method is in line with the PDD sampling plan/PDD/ and methodology requirement/TPDDTEC/. **iv. Hygiene campaign and survey** PP conducted general hygiene campaign by attaching it to the sale meeting. PP also conducted hygiene survey in addition to project and usage survey. Via checking the Hygiene Champaign Attendant list 2020/HCAL/, it is verified that 113,246 people joined the hygiene campaign in this MP and the hygiene survey was confirmed as conducted together with project and usage survey

	which is verified by checking the monitoring survey report/MSR/, it showed that all the rspondents have the awareness that handwashing before eating/drinking is somewhat or very important and the results is confirmed reasonable and credible. **Sales Record and Project Database** PP has created and maintained the sales record along with the CWP sold/distributed. The related information of CWP is included in the database which has been confirmed by checking the sales record/SR/. Also the PP has created and maintained the project database along with the end-user warranty card distributed. The contact detail of end users are recorded in the project database which has been confirmed by checking the project database/PD/. It is verified that **113,609** end user's information is recorded and complete for the end user pool to which random sampling can be applied. **Quality Assurance and Quality Control** The related QA/QC procedure has been conducted by PP for the monitoring process including accurate and transparent record keeping, cross-check, monitoring and evaluation which has been verified by checking the related protocols and survey reports. 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. **Double counting assessment** The VVB has checked for double counting by reviewing all relevant registries including CDM/unfccc/, VCS/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 VERs/CO_2-certificates from the considered project activity. Furthermore, for the project users and stove number sold management, to avoid the double counting, PP has implemented the related actions as following, i. Hydrologic has added a serial number to all water filters produced and kept the numbers in a database; Verifier checked the database of Serial number 2020/SNCWP/ comparing with all the serial numbers with previous MP database and found no duplication of the serial number to all water filters. Furthermore, through previous on-site investigation, verification team found that all sampled water filters have a unique serial number attached to the devices. ii. The design of the water filters from Hydrologic look physically different from other water filters in the market, making it easy to recognize them; and Through previous on-site observation, it is found that the water filters from Hydrologic have their unique brand attached to the devices so that to be easily recognized comparing with others. iii. Hydrologic will only account for the water filters coming out of their factory, thus removing the risk that other water filters may be double counted. Via checking the sales records/SR/ against the ER calculation sheet/XLS/, it is confirmed that only water filters from Hydrologic factory are accouted, no risk of counting other brand into the ER sheet. 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 and PDD for 2nd CP.

	The following sources of information have been used in this context: • /MR/ • /TPDDTEC/ • /PDD/ • /XLS/ • /TA/ • /TRFA/ • /SP/ • /MSR/ • /WDP/ • /WQTR/ • /WQTP/ • /HCAL/ • /SR/ • /SNCWP/ • /PD/ • /gs/ • /unfccc/ • /vcs/	
Findings	☐	The MP is completely in accordance with the approved methodology applied by the GS project (last registered/approved version of the PDD)
	☒	In this context the following CARs, CLs, FARs have been raised: - CAR 03
Conclusion	☐	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	☒	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	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

By means of comparison of the MR and the ER calculation with the approved 2nd Crediting Period PDD/PDD/ and Transition Annex/TA/, the verification team has checked whether all parameters fixed ex-ante have been applied correctly.

The parameters that are fixed ex ante are following:

Parameters	Source of data	Values applied	Demonstration by Verification team
$f_{NRB,y}$ - Non-renewable biomass ratio	CDM-EB 77 meeting report/EB77/	77%	PP has applied value of 77% , this value is a default value applied as per UNFCCC based on the revised CDM-EB 77 meeting report/EB77/. This is further cross checked and confirmed with the UNFCCC website i.e. Information note on default values of fraction of non-renewable biomass for Cambodia Version 01.0/IFNRB/
$f_{ff,b,y}$ - Fraction of non-renewable fuel for fossil fuels (LPG)	AMS-III.AV Version 5/AMS-III.AV/	100%	Fraction of non-renewable fuel for fossil fuels (LPG) of 100% derived is from AMS-III.AV, Version 5

	$NCV_{b,wood}$ / $NCV_{p,wood}$	Data from approved 2nd Crediting Period PDD and IPCC	0.015 TJ/ton	PP has applied a default value of 0.015 for this monitoring period, and the value is obtained from IPCC/IPCC/ Guidelines for National Greenhouse Gas Inventories", Volume 2, Energy, Chapter 2, Stationary Combustion, Table 2.5 – This value is found correct and acceptable.
	$NCV_{b,LPG}$ / $NCV_{p,LPG}$	Data from approved 2nd Crediting Period PDD and IPCC	0.047 TJ/ton	PP has applied a default value of 0.047 for this monitoring period, and the value is obtained from IPCC/IPCC/ (2006) "IPCC Guidelines for National Greenhouse Gas Inventories", Volume 2, Energy, Chapter 1, Introduction, Table 1.2, p 1.18. This value is found correct and acceptable.
	Wood to charcoal conversion factor	AMS-II.G. /AMS-II.G./	6	Default value in AMS-II.G. "Energy efficiency measures in thermal applications of non-renewable biomass". /AMS-II.G./
	$EF_{b,wood,CO2}$ / $EF_{p,wood,CO2}$	Data from approved 2nd Crediting Period PDD and IPCC/IPCC/	112.00 tCO_2/TJ	PP has applied a default value of 112.00 for this monitoring period, and the value is obtained from IPCC/IPCC/ Guidelines for National Greenhouse Gas Inventories", Volume 2, Energy, Chapter 2, Stationary Combustion, Table 2.5 – This value is found correct and acceptable.
	$EF_{b,wood,nonCO2}$ / $EF_{p,wood,nonCO2}$	Data from approved 2nd Crediting Period PDD and IPCC/IPCC/	8.69 tCO_2/TJ ((CH_4= 0.3* GWP 25) + (N_2O=0.004 * GWP 298))	PP has applied a value of 8.69 for this monitoring period, and the value is obtained from IPCC/IPCC/ Guidelines IPCC Guidelines for National Greenhouse Gas Inventories", Volume 2, Energy, Chapter 2, Stationary Combustion, Table 2.5 For GWP: IPCC (2007) "IPCC Fourth Assessment Report: Climate Change 2007/ Climate Change 2007/Working Group I: The Physical Science Basis 2.10.2 Direct Global Warming Potential" available at [last accessed 15-06-2015]: http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html This value is found correct and acceptable.
	$EF_{b,LPG,CO2}$ / $EF_{p,LPG,CO2}$	Data from approved 2nd Crediting Period PDD and IPCC/IPCC/	63.1 tCO_2/TJ	PP has applied a default value of 63.1 for this monitoring period, and the value is obtained from IPCC/IPCC/ Guidelines for National Greenhouse Gas Inventories", Volume 2, Energy, Chapter 2, Stationary Combustion, Table 2.5 – This value is found correct and acceptable.

	$EF_{b,LPG,non-CO2}$ / $EF_{p,LPG,non-CO2}$	Data from approved 2nd Crediting Period PDD and IPCC/IPCC/	0.1548 tCO_2/TJ ((CH_4=0.005*GWP 25) + (N_2O=0.001*GWP 298))	PP has applied a value of 0.1548 for this monitoring period, and the value is obtained from IPCC/IPCC/ Guidelines IPCC Guidelines for National Greenhouse Gas Inventories", Volume 2, Energy, Chapter 2, Stationary Combustion, Table 2.5 For GWP: IPCC (2007) "IPCC Fourth Assessment Report: Climate Change 2007/ Climate Change 2007/Working Group I: The Physical Science Basis 2.10.2 Direct Global Warming Potential" available at [last accessed 15-06-2015]: http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html This value is found correct and acceptable. However, it is checked that this value is minimal comparing with the value of $EF_{b,LPG,CO2}/EF_{p,LPG,CO2}$ which is deemed negligible in the ER calculation. As a result, it is set to zero in the ER calculation for simplicity.
	X_{boil}	Data from approved 2nd Crediting Period PDD, Baseline Report/BSR/ and C_j & X_{boil} calculation sheet/CJX/	5.8%	PP has applied a value of 5.8% as a percentage of premises that in the absence of the project activity would have used non-GHG emitting technologies like chlorine treatment techniques (if available) in the project boundary – This value is sourced from the Baseline report/BSR/ carried out in 2017 and C_j & X_{boil} calculation sheet/CJX/. The executive summary of this report summarizes this value based on findings of the survey. The value applied found conservative and found valid.
	C_j	Data from approved 2nd Crediting Period PDD, Baseline Report/BSR/ and C_j & X_{boil} calculation sheet/CJX/	25.97%	PP has applied a value of 25.97% as a fraction / portion of users of the project technology who were in baseline scenario already using safe drinking water without boiling it – This value is sourced from the Baseline report/BSR/ carried out in 2017 and C_j & X_{boil} calculation sheet/CJX/. The executive summary of this report summarizes this value based on findings of the survey. The value applied is found conservative, correct and valid.
	$W_{b,y,TRAD,wood}$ $W_{p,y,TRAD,wood}$	Baseline Water Boiling Test in HSE(2019) Monitori	300.38 g/l	PP has applied a value of 300.38 g/l for this monitoring period. This is based on the results of Baseline Water Boiling Test in Monitoring Survey Report/MSR/. This parameter was monitored in Jan

	ngSurvey_V6Final/MSR/		2019 and is still valid in this MP due to the frequency of the Baseline Water Boiling Test is every two years. This value has been verified in the last periodic verification report. Refer to verification report for 1st MP CP2 for assessment details.
$W_{b,y,TRAD,charcoal}$ $W_{P,y,TRAD,charcoal}$	Baseline Water Boiling Test in HSE(2019)_MonitoringSurvey_V6Final/MSR/	144.50 g/l	PP has applied a value of 144.50 g/l for this monitoring period. This is based on the results of Baseline Water Boiling Test in Monitoring Survey Report/MSR/. This parameter was monitored in Jan 2019 and is still valid in this MP due to the frequency of the Baseline Water Boiling Test is every two years. This value has been verified in the last periodic verification report. Refer to verification report for 1st MP CP2 for assessment details.
$W_{b,y,IMP,wood}$ $W_{p,y,IMP,wood}$	Baseline Water Boiling Test in HSE(2019)_MonitoringSurvey_V6Final/MSR/	357.70 g/l	PP has applied a value of 357.70 g/l for this monitoring period. This is based on the results of Baseline Water Boiling Test in Monitoring Survey Report/MSR/. This parameter was monitored in Jan 2019 and is still valid in this MP due to the frequency of the Baseline Water Boiling Test is every two years. This value has been verified in the last periodic verification report. Refer to verification report for 1st MP CP2 for assessment details.
$W_{b,y,IMP,charcoal}$ $W_{p,y,IMP,charcoal}$	Baseline Water Boiling Test in HSE(2019)_MonitoringSurvey_V6Final/MSR/	179.80 g/l	PP has applied a value of 179.80 g/l for this monitoring period. This is based on the results of Baseline Water Boiling Test in Monitoring Survey Report/MSR/. This parameter was monitored in Jan 2019 and is still valid in this MP due to the frequency of the Baseline Water Boiling Test is every two years. This value has been verified in the last periodic verification report. Refer to verification report for 1st MP CP2 for assessment details.
$W_{b,y,LPG(small)}$ $W_{p,y,LPG(small)}$	Baseline Water Boiling Test in HSE(2019)_MonitoringSurvey_V6Final/MSR/	31.20 g/l	PP has applied a value of 31.20 g/l for this monitoring period. This is based on the results of Baseline Water Boiling Test in Monitoring Survey Report/MSR/. This parameter was monitored in Jan 2019 and is still valid in this MP due to the frequency of the Baseline Water Boiling Test is every two years. This value has been verified in the

				last periodic verification report. Refer to verification report for 1st MP CP2 for assessment details.
	$W_{b,y,LPG(large)}$ $W_{p,y,LPG(large)}$	Calculation	15.11 g/l	PP has applied a value of 15.11 grams/liter for this monitoring period. This parameter is not monitored by BWBT protocol due to the safety reason. So PP calculated this value by theoretical formula, The quantity of LPG (in tonnes) required to treat one litre of water = SEC/[NCV_LPG*Conversion factor (TJ to kJ)] Where SEC is calculated according to CDM methodology AMS-III.AV Version 5, $SEC = \left[WH \times \left(T_f - T_i\right) + 0.01 \times WHE\right] / n_{wb}$ SEC =[4.186*(100 – 20)+ 0.01*2260]/0.5 = 714.96 kJ/L Hence, The quantity of LPG (in tonnes) required to treat one litre of water = 714.96/(0.047*10^9)= 0.00001511 tonnes = 15.11 grams The value applied by the PP is found correct and conservative hence accepted.
	$W_{b,y,WEIGHTED,wood}$	Baseline Water Boiling Test in HSE(2019)_MonitoringSurvey_V6Final/MSR/ and Baseline Survey/BSR/	0.000211 t	PP has applied a value of 0.000211 t for this monitoring period. The formula used to reach this figure is: $W_{Wood\ required\ to\ boil\ 1\ litre\ of\ water\ with\ traditional.stove} * \%_{stove\ usage\ in\ baseline\ scenario} + W_{Wood\ required\ to\ boil\ 1\ litre\ of\ water\ with\ improved.stove} * \%_{stove\ usage\ in\ baseline\ scenario} = W_{b,y,WEIGHTED,wood}$ W is based on the results of Baseline Water Boiling Test in Monitoring Survey Report conducted in CP2MP1/MSR/ and percentage of stove usage in the baseline scenario is taken from the baseline survey/BSR/. This parameter was monitored in Jan 2019 which is still used in this MP due to the frequency of the Baseline Water Boiling Test is every two years. This value has been verified in the last periodic verification report. Refer to verification report for 1st MP CP2 for assessment details.
	% of Traditional Stove Users with wood in the baseline	Baseline Survey/BSR/	56.93%	Percentage of traditional stove users with wood in the baseline scenario is taken from the baseline survey/BSR/ conducted in 2017 which has been verified during the validation process.
	% of Improved Stove Users	Baseline Survey/BSR/	11.26%	Percentage of improved stove users with wood in the baseline scenario is taken from the baseline

	with wood in the baseline			survey/BSR/ conducted in 2017 which has been verified during the validation process.
	$W_{b,y,WEIGHTED,charcoal}$	Baseline Water Boiling Test in HSE(2019)_MonitoringSurvey_V6Final/MSR/ and Baseline Survey/BSR/	0.000009 t	PP has applied a value of 0.000009 t for this monitoring period. The formula used to reach this figure is: $W_{Charcoal\ required\ to\ boil\ 1\ litre\ of\ water\ with\ traditional.stove} * \%_{stove\ usage\ in\ baseline\ scenario} + W_{Charcoal\ required\ to\ boil\ 1\ litre\ of\ water\ with\ improved.stove} * \%_{stove\ usage\ in\ baseline\ scenario} = W_{b,y,WEIGHTED,charcoal}$ W is based on the results of Baseline Water Boiling Test in Monitoring Survey Report/MSR/ and percentage of stove usage in the baseline scenario is taken from the baseline survey/BSR/. This parameter was monitored in Jan 2019 which is still used in this MP due to the frequency of the Baseline Water Boiling Test is every two years. This value has been verified in the last periodic verification report. Refer to verification report for 1st MP CP2 for assessment details.
	% of Traditional Stove Users with charcoal in the baseline	Baseline Survey/BSR/	5.19%	Percentage of traditional stove users with charcoal in the baseline scenario is taken from the baseline survey/BSR/ conducted in 2017 which has been verified during the validation process.
	% of Improved Stove Users with charcoal in the baseline	Baseline Survey/BSR/	0.87%	Percentage of improved stove users with charcoal in the baseline scenario is taken from the baseline survey/BSR/ conducted in 2017 which has been verified during the validation process.
	$W_{b,y,WEIGHTED,LPG}$	Baseline Water Boiling Test in HSE(2019)_MonitoringSurvey_V6Final/MSR/ and Baseline Survey/BSR/	0.0000044 t	PP has applied a value of 0.0000044 t for this monitoring period. The formula used to reach this figure is: $[W_{LPG\ required\ to\ boil\ 1\ litre\ of\ water\ with\ Small\ LPG\ stove} * \%\ of\ small\ LPG_{stove\ usage\ in\ project\ scenario} + W_{LPG\ required\ to\ boil\ 1\ litre\ of\ water\ with\ Large\ LPG\ stove} * \%\ of\ Large\ LPG_{stove\ usage\ in\ project\ scenario}]*\%\ of\ LPG\ stove\ in\ the\ baseline\ survey = W_{b,y,LPG}$ W is based on the results of Baseline Water Boiling Test in Monitoring Survey Report/MSR/ and percentage of LPG stove in the baseline survey is taken from the baseline survey/BSR/. This parameter was monitored in Jan 2019 which is still used in this MP due to the frequency of the Baseline Water Boiling Test is every

			two years. This value has been verified in the last periodic verification report. Refer to verification report for 1st MP CP2 for assessment details.
% of LPG stove in the baseline scenario	Baseline Survey/BSR/	19.91%	Percentage of LPG stove in the baseline scenario is taken from the baseline survey/BSR/ conducted in 2017 which has been verified during the validation process.
% of small LPG_{stove} usage in baseline scenario	Baseline Water Boiling Test in HSE(2019)_MonitoringSurvey_V6Final/MSR/	44%	The result is derived from Baseline Water Boiling Test in Monitoring Survey Report/MSR/. This parameter was monitored in Jan 2019 which is still used in this MP due to the frequency of the Baseline Water Boiling Test is every two years. This value has been verified in the last periodic verification report. Refer to verification report for 1st MP CP2 for assessment details.
% of large LPG_{stove} usage in baseline scenario	Baseline Water Boiling Test in HSE(2019)_MonitoringSurvey_V6Final/MSR/	56%	The result is derived from Baseline Water Boiling Test in Monitoring Survey Report/MSR/. This parameter was monitored in Jan 2019 which is still used in this MP due to the frequency of the Baseline Water Boiling Test is every two years. This value has been verified in the last periodic verification report. Refer to verification report for 1st MP CP2 for assessment details.
Growth stock in forest in Cambodia	Global Forest Resources Assessment 2015/GFRA/ and IPCC 2006/IPCC/, Transition Annex/TA/	162.15 t/ha	The value is calculated by Cambodia growth stock in forest (m^3/ha) * Converting factor from m^3 of wood to tonne of wood = 94 m^3/ha*1.725 tonne/m^3=162.15 tonne/hectare Cambodia growing stock (94m^3/ha) is derived from Global Forest Resources Assessment 2015, Page 79, Table 13 Growing stock in forest and other wooded land 2015; Converting factor from m^3 of wood to tonne (1.725 tonne/m^3 is derived from Chapter 3: LUCF sector Good Practice Guidance IPCC 2006, page 12. This value is also approved during the transition which listed in the Transition Annex/TA/. Hence, the value applied by the PP is found correct and reasonable and hence accepted.

The following sources of information have been used in this context:

- /MR/
- /XLS/
- /PDD/

	• /EB77/ • /AMS-III.AV/ • /IFNRB/ • /CJX/ • /GFRA/ • /BSR/ • /MSR/ • /IPCC/ • /TA/	
Findings	☒	The MR and the ER calculation have considered the parameters fixed ex-ante or at the renewal of the crediting period correctly, no deviations have been observed.
	☐	The following deviations from the parameters fixed ex-ante or at renewal of crediting period have been identified in the course of this verification: - N/A
	☐	In this context the following CARs, CLs, FARs have been raised: - N/A
Conclusion	☒	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	☐	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	The parameters fixed ex ante have been indicated in the revised approved GS PDD for 2nd CP. And the MR is checked as in line with the PDD. The values are applied consistent.	

E.6.2. SDG Data and parameters monitored

Means of verification	During the verification all relevant monitoring parameters (as listed in C.1 of Transition Annex) have been verified with regard to the (i) appropriateness of the applied measurement / determination method, (ii) the correctness of the values applied for ER calculation, (iii) the accuracy, and applied QA/QC measures. The results as well as the verification procedure are described parameter-wise in the project specific verification checklist (Appendix 5).	
Findings	CAR 04, CAR 05, CAR 06, CL 02, CL 03	
Conclusion	☐	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	☒	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	It can be confirmed that all monitoring parameters have been measured / determined without material misstatements and in line with all applicable standards and relevant requirements.	

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

Means of verification

This is the 3rd monitoring period. PP has provided the values from 2nd monitoring period and values from 3rd monitoring period for each monitoring parameters for comparison as below table.

Data/Parameter	Unit	Value obtained in this MP	Value obtained last MP
$T_{p,y}$	CWP	33,746.00	35,061.00
$U_{p,y}$	%	83.18	82.62
$WQ_{Passed,y}$	%	90.00	90.56
Hygiene Campaigns	People	13,246.00	91,764
$N_{p,y}$	People	1,908.95	1741.05
$Q_{p,y}$	l/person/day	1.19	1.46
$Q_{p,rawboil,y}$	l/person/day	0.55	0.48
$Q_{p,cleanboil,y}$	l/person/day	0.03	0.15

	Women%_HH	%	56.25	54.34
	Women%	%	81.65	84.15
	$N_{Less\_smoke,y}$	%	75.90	74.00
	Percentage of Traditional Stove Users with wood in the project scenario	%	44.10	53.90
	Percentage of Improved Stove Users with wood in the project scenario	%	13.10	18.50
	Percentage of Traditional Stove Users with charcoal in the project scenario	%	0.00	1.50
	Percentage of Improved Stove Users with charcoal in the project scenario	%	1.20	1.50
	Percentage of LPG stove usage in the project scenario	%	26.20	20.00
	Percentage of small LPG stove usage in the project scenario	%	9.10	38.50
	Percentage of large LPG stove usage in the project scenario	%	90.90	61.50
	$LE_{p,y}$	tCO_2e/Unit	0.012	0.014
	Total amount of biomass fuel saves	t	65,540.00	63,697.00
	Total amount of LPG saves	t	956.00	1,062.00
	Percentage of household noted on money save after using the project technology	%	82.1	80.70
	Percentage of household noted on time save after using the project technology	%	91.2	90.65
	Number of people using CWP and note that their kitchen is less smoke	People	566,366.63	538,933.77
	The number of women and girls benefiting from stop/reduce boiling water and collecting/purchasing cooking fuel	People	253,712.78	246,538.75
	Number of people with access to safe drinking water	People	746,201.09	728,288.88
	Amount of energy saved from avoiding boiling water	TJ	1,028.00	1,006.00
	Number of new job created by the project with safe and healthy work environment	Staff	85.00	90.00
	Amount of ER	tCO_2e	93,878.00	90,993.00
	Area of forest save	Hectare	404.00	393.00
	Via checking the verification report of 2nd monitoring period/VER/, it is confirmed that the values are correct and based on the comparison, it is verified that the values for all the monitoring parameters are not changed significantly comparing with the 2nd monitoring period/VER/, and the reason for change has been added in the table for each parameter which is verified as correct and reasonable. Hence, based on above assessment, it is concluded that the values for this monitoring period is verified as reasonable.			
Findings	CL 04 was raised and resolved.			

Conclusion	☐	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	☒	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	It can be confirmed that all monitoring parameters have been measured / determined without material misstatements and in line with all applicable standards and relevant requirements.	

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

Means of verification	The verification team has been checked whether the PP have applied a sampling approach to determine the monitored values. Further it has been checked whether the PP have correctly applied the implemented sampling plan including (i) description of the implemented sampling design (ii) collected data (iii) analysis of collected data (iv) demonstration on whether the required confidence/precision has been met. The following sources of information have been used in this context: • /MR/ • /XLS/ • /PDD/ • /MSR/ • /SNC/ • /TPDDTEC/ • /GST/ • /WQTP/ • /WQTR/			
Findings	☐	The PPs have not applied sampling approaches for the parameters monitored.		
	☒	The PPs have applied sampling approaches for the following parameters monitored		
		1	Parameter:	$Q_{P,y}$
			Name:	Quantity of purified water consumed in the project scenario p per person per day
			Description on how the sampling efforts and survey comply with the validated sampling plan:	PP took a sample number of 140 for water consumption filed test which is in line wih the 90/10 rule as defined in the sample number calculation/SNC/, and the margin of error at 90% level of confidence is less than 10%. Via checking the sampling method as stated in the monitoring survey report/MSR/, it is verified that the method is in line with the PDD sampling plan/PDD/, methodology requirement/TPDDTEC/ and GS4GG rules/GST/.
		2	Parameter:	$Q_{p,rawboil,y}$
			Name:	The raw or unsafe water that is still boiled after installation of the CWP
			Description on how the sampling efforts and survey comply with the validated sampling plan:	PP took a sample number of 140 for water consumption filed test which is in line wih the 90/10 rule as defined in the sample number calculation/SNC/, and the value of upper limit is applied instead of using the mean value, due to the reason that the resulting margin of error (18.97%) is greater than that of the

				tolerated value (10%) as based on TPDDTEC 3.0, footnote 63, page 46. Via checking the sampling method as stated in the monitoring survey report/MSR/, it is verified that the method is in line with the PDD sampling plan/PDD/, methodology requirement/TPDDTEC/ and GS4GG rules/GST/.
		3	Parameter:	$Q_{p,cleanboil,y}$
			Name:	Quantity of safe water (treated or from safe supply) boiled in the project scenario p, after installation of the CWP
			Description on how the sampling efforts and survey comply with the validated sampling plan:	PP took a sample number of 140 for water consumption filed test which is in line wih the 90/10 rule as defined in the sample number calculation/SNC/, and the value of upper limit is applied instead of using the mean value, due to the reason that the resulting margin of error (72.25%) is greater than that of the tolerated value (10%) as based on TPDDTEC 3.0, footnote 63, page 46. Via checking the sampling method as stated in the monitoring survey report/MSR/, it is verified that the method is in line with the PDD sampling plan/PDD/, methodology requirement/TPDDTEC/ and GS4GG rules/GST/.
		4	Parameter:	$WQ_{Passed,y}$
			Name:	Performance of the CWP
			Description on how the sampling efforts and survey comply with the validated sampling plan:	PP took a sample number 180 (45 for each round and total 4 round)/WQTR/ for water quality test which is in line wih the 90/10 rule as defined in the water quality test protocol/WQTP/. The sampling ensures at least a 90% confidence level and a 10% margin of error (±10%) in the results. It is verified that all the sample number is above the minimum number. Via checking the sampling method as stated in the water quality test protocol/WQTP/, it is verified that the method is in line with the PDD sampling plan/PDD/, methodology requirement/TPDDTEC/ and GS rules/GST/.
		5	Parameter:	$U_{p,y}$
			Name:	Weighted average usage rate
			Description on how the sampling efforts and survey comply with the validated sampling plan:	PP took a sample number of 185 for usage survey which is in line with the methodology requirement as defined in the sampling protocol/SP/. It is verified that the sample number is above the minimum number requested in the applied methodology of 150. Via checking the sampling method as stated in the monitoring survey report/MSR-CP2/, it is verified that the method is in line with the PDD sampling plan/PDD/, methodology requirement/TPDDTEC/ and GS rules/GST/.

				The following is checked by the verification team to confirm the compliance with the applied methodology requirement "To ensure conservativeness, participants in a usage survey with technologies in the first year of use (age0-1) must have technologies that have been in use on average longer than 0.5 years. For technologies in the second year of use (age1-2), the usage survey must be conducted with technologies that have been in use on average at least 1.5 years, and so on." The conservativeness of each age group has been taken into consideration in the sampling selection, "ARC_HSE_MS_2020_Final_ Report_V12_final" is checked and confirmed.
		6	Parameter:	$N_{p,y}$
			Name:	Number of persons consuming water supplied by project scenario p through year y
			Description on how the sampling efforts and survey comply with the validated sampling plan:	PP took a sample number of 140 for water consumption filed test which is in line wih the 90/10 rule as defined in the sample number calculation/SNC/, and the margin of error at 90% level of confidence is less than 10%. Via checking the sampling method as stated in the monitoring survey report/MSR/, it is verified that the method is in line with the PDD sampling plan/PDD/, methodology requirement/TPDDTEC/ and GS4GG rules/GST/.
		7	Parameter:	$W_{b,y,TRAD,wood}$
			Name:	Quantity of wood required to treat 1 litre of water using traditional stoves in baseline scenario
			Description on how the sampling efforts and survey comply with the validated sampling plan:	As verified in the 1st periodic verification, Refer to the verification report for MP1CP2/VER/. The value of this parameter should be updated if ongoing monitoring survey show that baseline water boiling change over time. Based on the monitoring survey report/MSR/, there is no change for water boiling technologies from that of the baseline: wood and charcoal with traditional cookstove and or improved cookstove; and LPG with LPG stove. Thus, BWBT is not updated.
		8	Parameter:	$W_{p,y,TRAD,wood}$
			Name:	Quantity of wood required to treat 1 litre of water using traditional stoves in project scenario
			Description on how the sampling efforts and survey comply	As verified in the 1st periodic verification, Refer to the verification report for MP1CP2/VER/.

			with the validated sampling plan:	The value of this parameter should be updated if ongoing monitoring survey show that baseline water boiling change over time. Based on the monitoring survey report/MSR/, there is no change for water boiling technologies from that of the baseline: wood and charcoal with traditional cookstove and or improved cookstove; and LPG with LPG stove. Thus, BWBT is not updated.
		9	Parameter:	$W_{b,y,TRAD,charcoal}$
			Name:	Quantity of charcoal required to treat 1 litre of water using traditional stoves in baseline scenario
			Description on how the sampling efforts and survey comply with the validated sampling plan:	As verified in the 1st periodic verification, Refer to the verification report for MP1CP2/VER/. The value of this parameter should be updated if ongoing monitoring survey show that baseline water boiling change over time. Based on the monitoring survey report/MSR/, there is no change for water boiling technologies from that of the baseline: wood and charcoal with traditional cookstove and or improved cookstove; and LPG with LPG stove. Thus, BWBT is not updated.
		10	Parameter:	$W_{p,y,TRAD,charcoal}$
			Name:	Quantity of charcoal required to treat 1 litre of water using traditional stoves in project scenario
			Description on how the sampling efforts and survey comply with the validated sampling plan:	As verified in the 1st periodic verification, Refer to the verification report for MP1CP2/VER/. The value of this parameter should be updated if ongoing monitoring survey show that baseline water boiling change over time. Based on the monitoring survey report/MSR/, there is no change for water boiling technologies from that of the baseline: wood and charcoal with traditional cookstove and or improved cookstove; and LPG with LPG stove. Thus, BWBT is not updated.
		11	Parameter:	$W_{b,y,IMP,Wood}$
			Name:	Wood required to treat 1 litre of water using improved cook stove in baseline scenario
			Description on how the sampling efforts and survey comply with the validated sampling plan:	As verified in the 1st periodic verification, Refer to the verification report for MP1CP2/VER/. The value of this parameter should be updated if ongoing monitoring survey show that baseline water boiling change over time. Based on the monitoring survey report/MSR/, there is no change for water boiling technologies from that of the baseline: wood and charcoal with traditional cookstove and or improved cookstove; and LPG with LPG stove. Thus, BWBT is not updated.

		12	Parameter:	$W_{p,y,IMP,Wood}$
			Name:	Wood required to treat 1 litre of water using improved cook stove in project scenario
			Description on how the sampling efforts and survey comply with the validated sampling plan:	As verified in the 1st periodic verification, Refer to the verification report for MP1CP2/VER/. The value of this parameter should be updated if ongoing monitoring survey show that baseline water boiling change over time. Based on the monitoring survey report/MSR/, there is no change for water boiling technologies from that of the baseline: wood and charcoal with traditional cookstove and or improved cookstove; and LPG with LPG stove. Thus, BWBT is not updated.
		13	Parameter:	$W_{b,y,IMP,Charcoal}$
			Name:	Charcoal required to treat 1 litre of water using improved cook stove in baseline scenario
			Description on how the sampling efforts and survey comply with the validated sampling plan:	As verified in the 1st periodic verification, Refer to the verification report for MP1CP2/VER/. The value of this parameter should be updated if ongoing monitoring survey show that baseline water boiling change over time. Based on the monitoring survey report/MSR/, there is no change for water boiling technologies from that of the baseline: wood and charcoal with traditional cookstove and or improved cookstove; and LPG with LPG stove. Thus, BWBT is not updated.
		14	Parameter:	$W_{p,y,IMP,Charcoal}$
			Name:	Charcoal required to treat 1 litre of water using improved cook stove in project scenario
			Description on how the sampling efforts and survey comply with the validated sampling plan:	As verified in the 1st periodic verification, Refer to the verification report for MP1CP2/VER/. The value of this parameter should be updated if ongoing monitoring survey show that baseline water boiling change over time. Based on the monitoring survey report/MSR/, there is no change for water boiling technologies from that of the baseline: wood and charcoal with traditional cookstove and or improved cookstove; and LPG with LPG stove. Thus, BWBT is not updated.
		15	Parameter:	$W_{b,y,LPG(small)}$
			Name:	LPG required to treat 1 litre of water using LPG stove (small) in baseline scenario
			Description on how the sampling efforts and survey comply with the validated sampling plan:	As verified in the 1st periodic verification, Refer to the verification report for MP1CP2/VER/. The value of this parameter should be updated if ongoing monitoring survey show that baseline water boiling change

				over time. Based on the monitoring survey report/MSR/, there is no change for water boiling technologies from that of the baseline: wood and charcoal with traditional cookstove and or improved cookstove; and LPG with LPG stove. Thus, BWBT is not updated.
		16	Parameter:	$W_{p,y,LPG(small)}$
			Name:	LPG required to treat 1 litre of water using LPG stove (small) in project scenario
			Description on how the sampling efforts and survey comply with the validated sampling plan:	As verified in the 1st periodic verification, Refer to the verification report for MP1CP2/VER/. The value of this parameter should be updated if ongoing monitoring survey show that baseline water boiling change over time. Based on the monitoring survey report/MSR/, there is no change for water boiling technologies from that of the baseline: wood and charcoal with traditional cookstove and or improved cookstove; and LPG with LPG stove. Thus, BWBT is not updated.
		17	Parameter:	$W_{b,y,LPG(large)}$
			Name:	LPG required to treat 1 litre of water using LPG stove (large) in baseline scenario
			Description on how the sampling efforts and survey comply with the validated sampling plan:	As verified in the 1st periodic verification, Refer to the verification report for MP1CP2/VER/. The value of this parameter should be updated if ongoing monitoring survey show that baseline water boiling change over time. Based on the monitoring survey report/MSR/, there is no change for water boiling technologies from that of the baseline: wood and charcoal with traditional cookstove and or improved cookstove; and LPG with LPG stove. Thus, BWBT is not updated.
		18	Parameter:	$W_{p,y,LPG(large)}$
			Name:	LPG required to treat 1 litre of water using LPG stove (large) in project scenario
			Description on how the sampling efforts and survey comply with the validated sampling plan:	As verified in the 1st periodic verification, Refer to the verification report for MP1CP2/VER/. The value of this parameter should be updated if ongoing monitoring survey show that baseline water boiling change over time. Based on the monitoring survey report/MSR/, there is no change for water boiling technologies from that of the baseline: wood and charcoal with traditional cookstove and or improved cookstove; and LPG with LPG stove. Thus, BWBT is not updated.
	☐	In this context the following CARs, CLs, FARs have been raised:		
		- N/A		

Conclusion	☒	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	☐	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	According to latest version of Guidelines: "Sampling and surveys for CDM project activities and programmes of activities"/SSG/ and Standard: "Standard for sampling and surveys for CDM project activities and Programme of Activities"/SSS/, and based on the verification team's local and sectorial knowledge, the verification team confirms that the sampling approach applied by the PP is in accordance with the approved 2nd Crediting Period PDD and applied methodology.	

E.7. Compliance with the calibration frequency requirements for measuring instruments

Means of verification	During the verification the relevant monitoring equipment has been checked whether the calibration requirements have been met; especially if the calibration frequency is in line with the requirements of the validated PDD and/or the applicable calibration standards. During the monitoring survey for this monitoring period, it was observed that the PP has used Weighing scale during Water consumption field test. For Water Consumption Field Test (WCFT), as per the monitoring plan defined in the registered PDD it is required to verify the accuracy of the devices prior to conducting the Field test. PP has done the calibration to confirm that the devices are good and giving desired results with required accuracy. Lastest calibration check of scales was done on 22/12/2020 and it is confirmed that the scales are in good condition and delivering correct outcome of measurement. The Records of internal Verification was found maintained in the "ARC_Hydrologic Calibration&Inventory_2020_EN"/CAL/, Verification team reviewed this and confirmed that it is in accordance with the method established for the calibration. The verification team has verified the calibration records/CAL/, since the Calibration is done just to confirm the correctness of the scales accuracy level, PP has utilized standard weight for calibrating the scale, standard weight is found maintained well and there is no deterioration is observed to the standard weight. PP has established Accuracy requirement of +/- 0.2 kg for scale. It is found clearly documented in "ARC_Hydrologic Calibration&Inventory_2020_EN"/CAL/. From the Calibration check done in December 2020, it is observed that the scales are found good. The calibration frequency fulfills the requirement as described in the monitoring plan and is in compliance with internal requirement defined in the document "ARC_Hydrologic Calibration&Inventory_2020_EN"/CAL/. As per the Monitoring plan it is required to calibrate the devices every time prior to the Field Test. Via checking the "ARC_Hydrologic Calibration&Inventory_2020_EN"/CAL/, verification team concluded that the records of Calibration produced by the PP are reliable and acceptable. For Baseline Water Boiling test (BWBT), via the conducted project survey result, it is verified that there is no change for water boiling technologies from that of the baseline: wood and charcoal with traditional cookstove and or improved cookstove; and LPG with LPG stove. Thus, BWBT is not updated in this MP, which is confirmed as reasonable and line with the PDD sampling plan/PDD/ and methodology requirement/TPDDTEC/. This means that monitored parameters including $W_{b,y,TRAD,wood}$, $W_{p,y,TRAD,wood}$, $W_{b,y,TRAD,charcoal}$, $W_{p,y,TRAD,charcoal}$, $W_{b,y,IMP,Wood}$, $W_{p,y,IMP,Wood}$, $W_{b,y,IMP,charcoal}$, $W_{p,y,IMP,charcoal}$, $W_{b,y,LPG(small)}$, $W_{p,y,LPG(small)}$, $W_{b,y,LPG(large)}$, $W_{p,y,LPG(large)}$, $W_{b,y,WEIGHTED,wood}$, $W_{b,y,WEIGHTED,charcoal}$ *and* $W_{b,y,WEIGHTED,LPG}$ are same to the last monitoring period which has been verified in the last MP and no need to be re-assessed in this

	MP. The following sources of information have been used in this context: • /MR/ • /XLS/ • /VER/ • /CAL/ • /TPDDTEC/	
Findings	☒	Based on the details listed above the verification team can confirm that all installed monitoring equipment has been duly calibrated for this entire monitoring period.
	☐	Based on the assessment and information as above calibration have been identified. The PP has applied the maximum permissible error of the instrument to the measured values taken during the period between the scheduled date of calibration and the actual date of calibration. From the related calibration certificates and emission reduction calculation the verification team confirms that the maximum permissible error has been applied in a conservative manner so that the adjusted measured values due to the delayed calibration result in fewer claimed emission reductions.
	☐	In this context the following CARs, CLs, FARs have been raised: - N/A
Conclusion	☒	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	☐	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	During this MP, no monitoring equipment was used for measuring the above paramters as per the PDD and transition annex. Hence, verification team concluded that no records of calibration produced during this monitoring period.	

E.8. Assessment of data and calculation of SDG impacts

E.8.1. Calculation of baseline value or estimation of baseline situation of each SDG impact

Means of verification	During the verification the calculation of baseline situation of each SDG impact has been checked. In detail the following has been verified: • *Transparency:* It has been checked whether the calculation of baseline emissions is fully traceable and, where used, the Excel calculation provides all calculation formulae. • *Parameter consistency:* It has been checked whether all internal and external parameters and data used for the calculation are applied consistently in the monitoring report and the calculation spreadsheet. • *Correctness:* It has been checked whether the applied formulae and methods for calculating baseline emissions are in accordance with the monitoring plan and the approved methodology. • *Completeness:* It has been checked whether all calculations are complete and without omissions. The following sources of information have been used in this context: • /MR/ • /XLS/ • /TPDDTEC/ • /MSR/ • /MSR/ • /SR/ Furthermore, the critical parameter used for the determination of each SDG impact is the total number of units of CWP's sold which is derived from the

sales record/SR/. Other parameters are derived from the monitoring surveys done during the monitoring period. Important surveys which are critical to arrive at the emission reductions are as listed below.

- Project Survey/MSR/
- WCFT/MSR/
- Usage Survey/MSR/

The data obtained through above survey and monitoring methods is maintained in the form of relevant records. All the data are in compliance with that stated in the MR.

SDG 1 Baseline Impact:

Via checking the MR and through interview with users, it is confirmed that the project helps users to save time spending on fuel collection/ purchase and boiling water, and save monry on fuel purchase and expenditure on medicine by reducing the rate of having waterborne disease.

Hence, in compliance with the UN's SDG indicator "1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)", the indicators of SDG1 are defined as **the amount fuel saves; the percentage of household noted on money save after using the project technology and the percentage of time save after using the project technology**.

Then the estimated Baseline Impact is calculated for different categories in SDG 1.
In the baseline situation, as per the interview with users/I3/, it is verified no percentage of household noted on fuel, money save and no percentage of household noted on time save after using the project technology. Therefore, the two Baseline Impact benefits are zero.
Based on the equations listed in MR and monitoring survey data which has been verified in Appendix 5, it is confirmed that the Baseline Impacts was estimated as following:

Indicator	Unit	Baseline situation
SDG1 (a) Biomass use	t	88,087
SDG1 (b) LPG use	t	1,465
SDG1 (c) % of HH noted on money save		0%
SDG1 (d) of % of HH noted on time save		0%

SDG 3 Baseline Impact:

Via checking the MR and through interview with users, it is confirmed that the project helps users to reducing smoke and dust coming from boiling water with solid biomass.

Hence, in compliance with the UN's SDG indicator "3.9.1 Mortality rate attributed to household and ambient air pollution", the indicators of SDG3 are defined as ***the number of people who notice less smoke in kitchen after having water filter***.

In the baseline situation, as per the interview with users/I3/, it is verified that no change in smoke level from boiling water. Therefore, Baseline Impact benefit is zero.

SDG 5 Baseline Impact:

Via checking the MR and through interview with woman and girl users, it is confirmed that the project helps users to reducing the work load on women and girls who are responsible for boiling water and collecting/purchasing cooking fuel.

Hence, in compliance with the UN's SDG indicator "5.4.1 Proportion of time spent on unpaid domestic and care work, by sex, age and location", the indicators of SDG5 are defined as ***the number of women and girls***

benefiting from stop/reduce boiling water and collecting/purchasing cooking fuel.

In the baseline situation, as per the interview with female users/I3/, it is verified that no distribution of project technology. Therefore, Baseline Impact benefit is zero.

SDG 6 Baseline Impact:

Via checking the MR and through interview with users, it is confirmed that the project provides a clean water supply to the users.

Hence, in compliance with the UN's SDG indicator "6.1.1 Proportion of population using safely managed drinking water services", the indicators of SDG6 are defined as ***the number of people served with satisfactory level of safe/potable water***.

In the baseline situation, as per the interview with female users/I3/, it is verified that no distribution of project technology. 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 "7.1.2 Proportion of population with primary reliance on clean fuels and technology", the indicators of SDG7 are defined as ***the amount of energy save from avoiding boiling water for drinking***.

In the baseline situation, as per the interview with users/I3/, 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 create jobs with safe and healthy work environment.

Hence, in compliance with the UN's SDG indicator "8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities", the indicators of SDG8 are defined as ***the number of new job created by the project with safe and healthy work environment***.

In the baseline situation, as per checking the Health and Safety Precautions/HSP/ and interview with representative of staffs/I2/,/I4/, it is verified that no new job created with safe and healthy work environment by this project. Therefore, Baseline Impact benefit is zero.

SDG 13 Baseline Impact:

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

The formula used for the determination of baseline emissions which is consistent with the approved 2nd Crediting Period PDD and the applied methodology:

$$BE_{b,y} = B_{b,wood,y} * ((\int_{NRB,b,y} * EF_{b,wood,CO2}) + EF_{b,wood,nonCO2}) * NCV_{b,wood} + B_{b,charcoal,\ y} * \text{Wood to charcoal factor} * ((\int_{NRB,b,y} * EF_{b,wood,CO2}) + EF_{b,wood,nonCO2}) * NCV_{b,wood} + B_{b,LPG,\ y} * ((\int_{ff,b,y} * EF_{b,LPG,CO2}) + EF_{b,LPG,nonCO2}) * NCV_{b,LPG}$$

Where:

Parameters	Description
$BE_{b,y}$	Emissions for baseline scenario b during the year y in tCO_2e
$B_{b,wood,y}$	Quantity of fuel (wood) consumed in baseline scenario b during year y, in tons
$B_{b,charcoal,y}$	Quantity of fuel (charcoal) consumed in baseline scenario b during year y, in tons

$B_{b,y,LPG}$	Quantity of fuel (LPG) consumed in baseline scenario b during year y, in tons
$f_{NRB,y}$	Fraction of biomass used during year y for the considered scenario that can be established as non-renewable biomass
$f_{ff,b,y}$	Fraction of non renewable fuel for fossil fuels (LPG)
$NCV_{b,wood}$	Net calorific value of wood that is substituted or reduced
$NCV_{b,LPG}$	Net calorific value of LPG that is substituted or reduced
Wood to charcoal conversion factor	Wood to charcoal conversion factor
$EF_{b,wood,CO2}$	CO_2 emissions factor of the fuel (wood) that it substituted or reduced
$EF_{b,LPG,CO2}$	CO_2 emissions factor of the fuel (LPG) that it substituted or reduced
$EF_{b,wood,nonCO2}$	Non-CO_2 emissions factor of the fuel (wood) that is substituted or reduced
$EF_{b,LPG,nonCO2}$	Non-CO_2 emissions factor of the fuel (LPG) that is substituted or reduced

- **Calculate $EF_{b,wood,nonCO2}$ / $EF_{p,wood,nonCO2}$**

$EF_{b,wood,nonCO2}$ / $EF_{p,wood,nonCO2}$ = [Wood Emission CH_4 Conversion Factor * Direct Global Warming Potential Equivalency (CH_4 to CO_2)] + [Wood Emission N_2O Conversion Factor * Direct Global Warming Potential Equivalency (N_2O to CO_2)]

Where:

Parameters	**Description**
$EF_{b,wood,nonCO2}$ / $EF_{p,wood,nonCO2}$	Non-CO_2 emissions factor of wood that is substituted or reduced
Wood Emission CH_4 Conversion Factor	N/A
Direct Global Warming Potential Equivalency (CH_4 to CO_2)]	N/A
Wood Emission N2O Conversion Factor	N/A
Direct Global Warming Potential Equivalency (N_2O to CO_2)]	N/A

- **Calculate $B_{b,y,wood}$**

$B_{b,y,wood} = (1-X_{boil}) * (1 – C_j) * N_{p,y} * (W_{b,y, WEIGHTED,wood)} * (Q_{p,y} + Q_{p,rawboil,y})$

Where:

Parameters	**Description**
$B_{b,y,wood}$	Quantity of wood consumed in baseline scenario p during the year y (tons)
X_{boil}	Percentage of premises that would have used other non-GHG emitting technologies like chlorine treatment techniques, if available, in the absence of project activities.
$N_{p,y}$	Number of person.days consuming water supplied by project scenario p through year y
C_j	Portion(%) of users of the project technology j who in the baseline were already consuming safe water without boiling it

$W_{b,y,WEIGHTED,wood}$	Weighted Average of wood quantity in kg required to treat 1 litre of water using technologies representative of baseline scenario b during project year y, as per Baseline Water Boiling Test
$Q_{p,y}$	Quantity of purified water consumed in the project scenario p per person per day
$Q_{p,rawboil,y}$	Quantity of raw or unsafe water boiled in the baseline scenario b per person per day

- **Calculate $W_{b,y,WEIGHTED,wood}$**

$W_{b,y,WEIGHTED,wood}$ = ($W_{b,y,TRAD,wood}$ * % of Traditional Stove Users with wood in the baseline) + ($W_{b,y,IMP,wood}$ * % of Improved Stove Users with wood in the baseline)

Where:

Parameters	Description
$W_{b,y,WEIGHTED,wood}$	Weighted Average of wood quantity in kg required to treat 1 litre of water using technologies representative of baseline scenario b during project year y, as per Baseline Water Boiling Test
$W_{b,y,TRAD,wood}$	Quantity of wood in kg required to treat 1 litre of water using Traditional cookstove in baseline scenario b during project year y
$W_{b,y,IMP,wood}$	Quantity of wood in kg required to treat 1 litre of water using Improve cookstove in baseline scenario b during project year y
-	% of Traditional Stove Users with wood in the baseline
-	% of Improved Stove Users with wood in the baseline

- **Calculate $B_{b,y,charcoal}$**

$B_{b,y,charcoal} = (1-X_{boil}) * (1 - C_j) * N_{p,y} * (W_{b,y,WEIGHTED,charcoal}) * (Q_{p,y} + Q_{p,rawboil,y})$

Where:

Parameters	Description
$B_{b,y,charcoal}$	Quantity of charcoal consumed in baseline scenario p during the year y (tons)
X_{boil}	Percentage of premises that would have used other non-GHG emitting technologies like chlorine treatment techniques, if available, in the absence of project activities.
$N_{p,y}$	Number of person.days consuming water supplied by project scenario p through year y
C_j	Portion(%) of users of the project technology j who in the baseline were already consuming safe water without boiling it
$W_{b,y,WEIGHTED,charcoal}$	Average Weighted of charcoal quantity in kg required to treat 1 litre of water using technologies representative of baseline scenario b during project year y, as per Baseline Water Boiling Test
$Q_{p,y}$	Quantity of purified water consumed in the project scenario p per person per day
$Q_{p,rawboil,y}$	Quantity of raw or unsafe water boiled in the baseline scenario b per person per day

- **Calculate $W_{b,y,WEIGHTED,charcoal}$**

$W_{b,y,WEIGHTED,charcoal}$ = ($W_{b,y,TRAD,charcoal}$ * % of Traditional Stove Users with charcoal in the baseline) + ($W_{b,y,IMP,charcoal}$ * % of Improved Stove Users with charcoal in the baseline)

Where:

Parameters	Description
$W_{b,y,WEIGHTED,charcoal}$	Weighted Average of charcoal quantity in kg required to treat 1 litre of water using technologies representative of baseline scenario b during project year y, as per Baseline Water Boiling Test
$W_{b,y,TRAD,charcoal}$	Quantity of charcoal in kg required to treat 1 litre of water using Traditional cookstove in baseline scenario b during project year y
$W_{b,y,IMP,charcoal}$	Quantity of charcoal in kg required to treat 1 litre of water using Improve cookstove in baseline scenario b during project year y
-	% of Traditional Stove Users with charcoal in the baseline
-	% of Improved Stove Users with charcoal in the baseline

- **Calculate $B_{b,y,LPG}$**

$B_{b,y,LPG} = (1-X_{boil}) * (1 – C_j) * N_{p,y} * (W_{b,y, WEIGHTED,LPG)} * (Q_{p,y} + Q_{p,rawboil,y})$

Where:

Parameters	Description
$B_{b,y,LPG}$	Quantity of LPG consumed in baseline scenario p during the year y (tons)
X_{boil}	Percentage of premises that would have used other non-GHG emitting technologies like chlorine treatment techniques, if available, in the absence of project activities.
$N_{p,y}$	Number of person.days consuming water supplied by project scenario p through year y
C_j	Portion(%) of users of the project technology j who in the baseline were already consuming safe water without boiling it
$W_{b,y,WEIGHTED,LPG}$	Average Weighted of LPG quantity in tonne required to treat 1 litre of water using technologies representative of baseline scenario b during project year y, as per Baseline Water Boiling Test
$Q_{p,y}$	Quantity of purified water consumed in the project scenario p per person per day
$Q_{p,rawboil,y}$	Quantity of raw or unsafe water boiled in the baseline scenario b per person per day

- **Calculate $W_{b,y,WEIGHTED,LPG}$**

$W_{b,y,WEIGHTED,LPG}$ =($W_{b,y,LPG(small)}$ * % of Small LPG stove usage in baseline scenario) + ($W_{b,y,LPG(large)}$ * % of Large LPG stove usage in baseline scenario)

Where:

Parameters	Description
$W_{b,y,WEIGHTED,LPG}$	Weighted Average of LPG quantity in tonne required to treat 1 litre of water using technologies representative of baseline scenario b during project year y
$W_{b,y,LPG(small)}$	Quantitiy of LPG in tonne required to treat 1 litre of water using LPG small stove in baseline scenario
$W_{b,y,LPG(large)}$	Quantitiy of LPG in tonne required to treat 1 litre of water using LPG large stove in baseline scenario
-	% of Small LPG stove usage in baseline scenario

	- % of Large LPG stove usage in baseline scenario - % of LPG stove usage in the baseline scenario The input to calculate baseline emissions are taken from the related monitoring surveys/MSR/ done during monitoring period including Project Survey, WCFT and Usage survey, and the monitoring surveys/MSR/ including Baseline Water Boiling test done in CP2MP1/VER/. The values monitored and recorded during these surveys are summarized and compared against previous monitoring period. The values monitored during such surveys are transparently shown in the Monitoring Report Section D.1 and D.2. During remote verification, the verification team crosschecked these values in detail using various supporting records and documents. Refer to the section D.6.1 and D.6.2, Appendix 5 of this report for parameters assessment. The **SDG 13 Baseline Impact** (Baseline emission calculation) is provided in the Emission reduction calculation spreadsheet/XLS/ 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 are calculated as: $BE_{b,y}$= 129,807 tCO_2e ***SDG 15 Baseline Impact:*** Via checking the MR and through interview with users, it is confirmed that the project reduce amount of fuel collected or purchased especially biomass save which contribute to the area of forest save. Hence, in compliance with the UN's SDG indicator "15.1.1 Forest area as a proportion of total land area", the indicators of SDG15 are defined as ***the area of forest save***. In the baseline situation, as per the interview with uers/I3/, it is verified that no area of forest save. Therefore, Baseline Impact benefit is zero.	
Findings	☐	The calculation of the baseline value or estimation of baseline situation of each SDG impact was found to be fully compliant with the above stated principles. The calculations of baseline situation of each SDG impact have been carried out in accordance with the formulae and methods described in the registered PDD, Transition Annex and the applied methodology. Any assumptions used in outcome calculations have been justified. Appropriate emission factors, IPCC default values, GWPs and other reference values have been correctly applied. No errors, miscalculations, omissions, misstatements or incomplete information has been identified.
	☒	The verification team has identified mistakes in the baseline value or estimation of baseline situation of each SDG impact or the underlying calculation approaches.
	☒	In this context the following CARs, CLs, FARs have been raised: - CAR 07
Conclusion	☐	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	☒	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	Where corrections where required a revised calculation of baseline situation of each SDG impact was prepared by the PPs and presented to the verification team. All raised issues were addressed appropriately so that it can be confirmed that the Baseline Impact calculation is overall correct.	

E.8.2. Calculation of project value or estimation of project situation of each SDG impact

Means of verification

During the verification the calculation of project situation of each SDG impact has been checked. In detail the following has been verified:

- *Transparency:* It has been checked whether the calculation of project emissions is fully traceable and, where used, the Excel calculation provides all calculation formulae.
- *Parameter consistency:* It has been checked whether all internal and external parameters and data used for the calculation are applied consistently in the monitoring report and the calculation spreadsheet.
- *Correctness:* It has been checked whether the applied formulae and methods for calculating project emissions are in accordance with the monitoring plan and the approved methodology.
- *Completeness:* It has been checked whether all calculations are complete and without omissions.

The following sources of information have been used in this context:

- /MR/
- /XLS/
- /TPDDTEC/
- /MSR/
- /SR/

Furthermore, the critical parameter used for the determination of each SDG impact is the total number of units of CWP's sold which is derived from the sales record/SR/. Other parameters are derived from the monitoring surveys done during the monitoring period. Important surveys which are critical to arrive at the emission reductions are as listed below.

- Project Survey/MSR/
- WCFT/MSR/
- Usage Survey/MSR/

The data obtained through above survey and monitoring methods is maintained in the form of relevant records. All the data are in compliance with that stated in the MR.

SDG 1 Project impact:

Via checking the MR and through interview with users, it is confirmed that the project helps users to save time spending on fuel collection/ purchase and boiling water, and save monry on fuel purchase and expenditure on medicine by reducing the rate of having waterborne disease.

Then the estimated Project impact is calculated for different categories in SDG 1.

In the project situation, as per checking the monitoring survey data/MSR/ the interview with users/I3/, it is verified that percentage of household noted on fuel, money save and percentage of household noted on time save after using the project technology.

Based on the equations listed in MR and monitoring survey data which has been verified in Appendix 5, it is confirmed that the Project impacts of SDG1 was estimated as following:

Indicator	Unit	Project Estimation
SDG1 (a) Biomass use	t	22,547
SDG1 (b) LPG use	t	509
SDG1 (c) % of HH noted on money save	%	82.10
SDG1 (d) of % of HH noted on time save	%	91.20

SDG 3 Project impact:

Via checking the MR and through interview with users, it is confirmed that the project helps users to reducing smoke and dust coming from boiling water with solid biomass.

In project situation, the number of people using CWP and note that their kitchen is less smoke could be calculated below:

***SDG3 contribution (number of people)* = $T_{p,y}$ * $N_{p,y}$ * $U_{p,y}$ * $WQ_{Passed,y}$ *$N_{Less\_smoke,y}$**

Where:

Parameters	Description
Project impact of SDG3	Number of people using CWP and note that their kitchen is less smoke
$T_{p,y}$	Cumulative number of sold project technologies (CWP)
$N_{p,y}$	The average population serviced by water purification system
$U_{p,y}$	Usage rate for technologies in project scenario p during year y, based on cumulative installation rate and drop off rate
$WQ_{Passed,y}$	Water Quality passing rate of water quality standard (WHO standard)
$N_{Less\_smoke,y}$	% of households notice that their kitchen is less smoke

In the project situation, as per the above calculation equation and checking the ER calculation spreadsheet/XLS/, it is verified that Project impacts of SDG3, i.e. the number of people who notice less smoke in kitchen after having water filter was 566,367 people during this monitoring period.

SDG 5 Project impact:

Via checking the MR and through interview with woman and girl users, it is confirmed that the project helps users to reducing the work load on women and girls who are responsible for boiling water and collecting/purchasing cooking fuel.
In project situation, the number of women and girls benefiting could be calculated below:

SDG5 contribution (number of people)* = $T_{p,y}$ * $N_{p,y}$ * $U_{p,y}$ * $WQ_{Passed,y}$ *(1-C_j)* Women%_HH * Women%_cooking

Where:

Parameters	Description
Project impact of SDG5	Number of women and girls benefiting from stop/reducing boiling water and collecting/purchasing cooking fuel
$T_{p,y}$	Cumulative number of sold project technologies (CWP)
$N_{p,y}$	The average population serviced by water purification system
$U_{p,y}$	Usage rate for technologies in project scenario p during year y, based on cumulative installation rate and drop off rate
$WQ_{Passed,y}$	Water Quality passing rate of water quality standard (WHO standard)
C_j	Portion(%) of users of the project technology j who in the baseline were already consuming safe water without boiling it
Women%_HH	Average percentage of women and girls per household
Women%_cooking	Average percentage of women and girls responsible for water boiling and collecting/purchasing cooking fuel before having CWPs.

In the project situation, as per the above calculation equation and checking the ER calculation spreadsheet/XLS/, it is verified that Project impacts of SDG5, i.e. the number of women and girls benefiting from stop/reducing boiling water and collecting/purchasing cooking fuel was 253,713 people during this monitoring period.

SDG 6 Project impact:

Via checking the MR and through interview with users, it is confirmed that the project provides a clean water supply to the users.
In project situation, the number of people with access to safe drinking water could be calculated below:

Project impact of SDG6 = $T_{p,y}$ * $N_{p,y}$ *$U_{p,y}$ * $WQ_{Passed,y}$

Where:

Parameters	Description
Project impact of SDG6	Number of people with access to safe drinking water
$T_{p,y}$	Cumulative number of sold project technologies (CWP)
$N_{p,y}$	The average population serviced by water purification system
$U_{p,y}$	Usage rate for technologies in project scenario p during year y, based on cumulative installation rate and drop off rate
$WQ_{Passed,y}$	Water Quality passing rate of water quality standard (WHO standard)

In the project situation, as per the above calculation equation and checking the ER calculation spreadsheet/XLS/, it is verified that Project impacts of SDG6, i.e. the number of people with access to safe drinking water was 746,201 people during this monitoring period.

SDG 7 Project impact:

Via checking the MR and through interview with users, it is confirmed that the project promotes access to affordable and clean energy services.
In project situation, the amount of energy saves from avoiding boiling water could be calculated below:
SDG7 contribution = (Amount of biomass use in baseline scenario – Amount of biomass use in project scenario) *** $NCV_{b,wood}$ +(amount of LPG use in baseline -LPG use in project) * $NCV_{b,LPG}$**

Where:

Parameters	Description
Amount of biomass use in baseline scenario	Amount of biomass use in baseline (tonne)
Amount of biomass use in project scenario	Amount of biomass use in project (tonne)
$NCV_{b,wood}$	Net calorific value of wood that is substituted or reduced
Amount of LPG use in Baseline	Amount of LPG use in baseline (tons)
Amount of LPG use in project	Amount of LPG use in project (tons)
$NCV_{b,LPG}$	Net calorific value of LPG that is substituted or reduced

In the project situation, as per the above calculation equation and checking the ER calculation spreadsheet/XLS/, it is verified that Project impacts of SDG7, i.e. the amount of energy saved from avoiding boiling water was 1,028 TJ during this monitoring period.

SDG 8 Project impact:

Via checking the MR and through interview with representative of staffs, it is confirmed that the project create jobs with safe and healthy work environment.

In project situation, the number of created jobs with safe and healthy work environment could be determined as below:

Project impact of SDG8 = Number of created jobs with safe and healthy work environment * % of worker with salaries paid are at par with wage laws in the host country

In the project situation, as per the above calculation equation and checking the HSE_CP2-MP3_Em&Inc2020/ERIG/, also cross-checked by latest staff list/SL/, labor contracts/LC/ and monthly payroll/PAY/ in 2020, it is verified that Number of created jobs with safe and healthy work environment is 85 and all the workers are paid salaries in accordance with the wage laws in the host country, in conclusion, the Project impacts of SDG8, i.e. the number of created jobs with safe and healthy work environment was 85 people during this monitoring period.

SDG 13 Project impact:

Project emissions $PE_{b,y}$ Calculation Assessment:

The formula used for the determination of project emissions which is consistent with the approved 2nd Crediting Period PDD and the applied methodology:

$$PE_{b,y} = B_{p,y,wood} * ((\int_{NRB,p,y} * EF_{p,wood,CO2}) + EF_{p,wood,nonCO2}) * NCV_{p,wood} + B_{p,y,charcoal} * \text{Wood to charcoal factor} ((\int_{NRB,p,y} * EF_{p,wood,CO2}) + EF_{p,wood,nonCO2}) * NCV_{p,wood} + B_{p,y,LPG} * ((\int_{ff,p,y} * EF_{p,LPG,CO2}) + EF_{p,LPG,nonCO2}) * NCV_{p,LPG}$$

Where:

Parameters	Description
$PE_{p,y}$	Emissions for project scenario p during the year y in tCO_2e
$B_{p,y,wood}$	Quantity of fuel (wood) consumed in project scenario p during year y, in tons
$B_{p,y,charcoal}$	Quantity of fuel (charcoal) consumed in project scenario p during year y, in tons
$B_{p,y,LPG}$	Quantity of fuel (LPG) consumed in project scenario p during year y, in tons
Wood to charcoal conversion factor	Wood to charcoal conversion factor
$\int_{NRB,y}$	Fraction of biomass used during year y for the considered scenario that can be established as non-renewable biomass
$EF_{p,wood,CO2}$	CO_2 emissions factor of the project fuel (wood) This is equal to the baseline fuel EF in projects which use the same fuel,
$EF_{p,charcoal,CO2}$	CO_2 emissions factor of the project fuel (charcoal) This is equal to the baseline fuel EF in projects which use the same fuel,
$EF_{p,LPG,CO2}$	CO_2 emissions factor of the project fuel (LPG) This is equal to the baseline fuel EF in projects which use the same fuel,
$EF_{p,wood,nonCO2}$	Non-CO_2 emissions factor of the project fuel (wood) This is equal to the baseline wood EF in projects which use the same fuel.
$EF_{p,LPG,nonCO2}$	Non-CO_2 emissions factor of the project fuel (LPG) This is equal to the baseline wood EF in projects which use the same fuel.
$NCV_{p,wood}$	Net calorific value of the project wood
$NCV_{p,LPG}$	Net calorific value of the project LPG

- **Calculate $B_{p,y,wood}$**

$B_{p,y,wood} = (1 – C_j) * N_{p,y} * (W_{p,y, WEIGHTED,wood)} * (Q_{p,rawboil,y} + Q_{p,rawboil,y})$

Where:

Parameters	Description
$B_{p,y,wood}$	Quantity of fuel consumed in project scenario p during the year y (tons)
$N_{p,y}$	Portion(%) of users of the project technology j who in the baseline were already consuming safe water without boiling it
C_j	Weighted Average of wood quantity in kg required to treat 1 litre of water using technologies representative of project scenario p during project year y
$W_{p,y,WEIGHTED,wood}$	Weighted Average of wood quantity in kg required to treat 1 litre of water using technologies representative of project scenario p during project year y
$Q_{p,rawboil,y}$	Quantity of raw or unsafe water boiled in the project scenario p per person per day
$Q_{p,cleanboil,y}$	Quantity of safe water boiled in the project scenario p per person per day

- **Calculate $W_{p,y,WEIGHTED,wood}$**

$W_{p,y,WEIGHTED,wood}$ = ($W_{p,y,TRAD,wood}$ * % of Traditional Stove Users with wood in the project) + ($W_{p,y,IMP,wood}$ * % of Improved Stove Users with wood in the project)

Where:

Parameters	Description
$W_{p,y,WEIGHTED,wood}$	Weighted Average of wood quantity in kg required to treat 1 litre of water using technologies representative of project scenario p during project year y, as per Baseline Water Boiling Test
$W_{p,y,TRAD,wood}$	Quantity of wood in kg required to treat 1 litre of water using Traditional cookstove in project scenario p during project year y
$W_{p,y,IMP,wood}$	Quantity of wood in kg required to treat 1 litre of water using Improve cookstove in project scenario p during project year y
	% of Traditional Stove Users with wood in the project scenario
	% of Improved Stove Users with wood in the project scenario

- **Calculate $B_{p,y,charcoal}$**

$B_{p,y,charcoal} = (1 – C_j) * N_{p,y} * (W_{p,y, WEIGHTED,charcoal)} * (Q_{p,rawboil,y} + Q_{p,rawboil,y})$

Where:

Parameters	Description
$B_{b,y,charcoal}$	Quantity of charcoal consumed in project scenario p during the year y (t)
$N_{p,y}$	Portion(%) of users of the project technology j who in the baseline were already consuming safe water without boiling it
C_j	Number of person.days consuming water supplied by project scenario p through year y

$W_{b,y,WEIGHTED,charcoal}$	Average weighted quantity of charcoal in kg required to treat 1 litre of water using technologies representative of project scenario p during project year y,
$Q_{p,rawboil,y}$	Quantity of raw or unsafe water boiled in the project scenario p per person per day
$Q_{p,cleanboil,y}$	Quantity of safe water boiled in the project scenario p per person per day

- **Calculate $W_{p,y,WEIGHTED,charcoal}$**

$W_{p,y,WEIGHTED,charcoal}$ = ($W_{b,y,TRAD,charcoal}$ * % of Traditional Stove Users with charcoal in the project) + ($W_{b,y,IMP,charcoal}$ * % of Improved Stove Users with charcoal in the project)

Where:

Parameters	Description
$W_{b,y,WEIGHTED,charcoal}$	Weighted Average of charcoal quantity in kg required to treat 1 litre of water using technologies representative of project scenario b during project year y, as per Baseline Water Boiling Test
$W_{b,y,TRAD,charcoal}$	Quantity of charcoal in kg required to treat 1 litre of water using Traditional cookstove in project scenario p during project year y
$W_{b,y,IMP,charcoal}$	Quantity of charcoal in kg required to treat 1 litre of water using Improve cookstove in project scenario p during project year y
% of Traditional Stove Users with charcoal in the project	% of Traditional Stove Users with charcoal in the project
% of Improved Stove Users with charcoal in the project)	% of Improved Stove Users with charcoal in the project)

- **Calculate $B_{p,y,LPG}$**

$B_{p,y,LPG}$ = ((1 – C_j) * $N_{p,y}$ * ($W_{p,y,\ WEIGHTED,LPG)}$ * ($Q_{p,y}$ + $Q_{p,rawboil,y}$)

Where:

Parameters	Description
$B_{p,y,LPG}$	Quantity of LPG consumed in project scenario b during the year y (t)
C_j	Portion(%) of users of the project technology j who in the baseline were already consuming safe water without boiling it
$N_{p,y}$	Number of person.days consuming water supplied by baseline scenario b through year y
$W_{p,y,WEIGHTED,LPG}$	Average weighted quantity of LPG in tonnes required to treat 1 litre of water using technologies representative of project scenario b during project year y,
$Q_{p,y}$	Quantity of clean water boiled in the project scenario p per person per day
$Q_{p,rawboil,y}$	Quantity of raw or unsafe water boiled in the project scenario p per person per day

- **Calculate $W_{p,y,WEIGHTED,LPG}$**

$W_{p,y,WEIGHTED,LPG}$ =($W_{b,y,LPG(small)}$ * % of Small LPG stove usage in baseline scenario) + ($W_{b,y,LPG(large)}$ * % of Large LPG stove usage in baseline scenario)

Where:

Parameters	Description
$W_{p,y,WEIGHTED,LPG}$	Weighted Average of LPG quantity in tonne required to treat 1 litre of water using technologies representative of project scenario p during project year y
$W_{p,y,LPG(small)}$	Quantity of LPG in kg required to treat 1 litre of water using small LPG cookstove in project scenario b during project year y
$W_{p,y,LPG(large)}$	Quantity of LPG in kg required to treat 1 litre of water using Large LPG cookstove in project scenario b during project year y
-	% of Small LPG stove usage in project scenario
-	% of Large LPG stove usage in project scenario
-	% of LPG stove usage in the project scenario

The input to calculate project emissions are taken from the related monitoring surveys/MSR/ done uring monitoring period including Project Survey, WCFT and Usage survey, and the monitoring surveys done during 1st monitoring period including Baseline Water Boiling test/VER/.

The values monitored and recorded during these surveys are summarized and compared against previous monitoring period. The values monitored during such surveys are transparently shown in the Monitoring Report Section D.1 and D.2. During remote verification, the verification team crosschecked these values in detail using various supporting records and documents. Refer to the section D.6.1 and D.6.2, Appendix 5 of this report for parameters assessment.

The **SDG 13 Project impact** (Project emission calculation) is provided in the Emission reduction calculation spreadsheet/XLS/ 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 project emission during this monitoring period are calculated as: $PE_{b,y}$= 33,627 tCO_2e.

SDG 15 Project impact:

Via checking the MR and through interview with users, it is confirmed that the project reduce amount of fuel collected or purchased especially biomass save which contribute to the area of forest save.
In project situation, the amount of area of forest save could be calculated below:
Project impact of SDG15 = (Amount of biomass use in baseline scenario – Amount of biomass use in project scenario) * f_{NRBy} /Growth stock in forest

Where:

Parameters	Description
Amount of biomass use in baseline scenario	Amount of biomass use in baseline per year [t]
Amount of biomass use in project scenario	Amount of biomass use in project per year [t]
$f_{NRB,y}$	Fraction of woody biomass used in the absence of the project activity in year y that can be established as non-renewable
Growth stock in forest	Growth stock in forest in Cambodia

In the project situation, as per the above calculation equation and checking the ER calculation spreadsheet/XLS/, it is verified that Project impacts of

	SDG15, i.e. the area of forest saved in project scenario was estimated to be 404 hectare during this monitoring period.	
Findings	☐	The calculation of the project value or estimation of project situation of each SDG impact was found to be fully compliant with the above stated principles. The calculations of project situation of each SDG impact have been carried out in accordance with the formulae and methods described in the registered PDD, Transition Annex and the applied methodology. Any assumptions used in outcome calculations have been justified. Appropriate emission factors, IPCC default values, GWPs and other reference values have been correctly applied. No errors, miscalculations, omissions, misstatements or incomplete information has been identified.
	☒	The verification team has identified mistakes in the project value or estimation of project situation of each SDG impact or the underlying calculation approaches.
	☒	In this context the following CARs, CLs, FARs have been raised: - CAR 08
Conclusion	☐	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	☒	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	It can be confirmed that the Project impact calculation is overall correct.	

E.8.3. Calculation of leakage

Means of verification	As per the Gold Standard Methodology "Technologies and Practices to Displace Decentralized Thermal Energy Consumption – version 3.0, July 2015", it is required to account the leakage emissions, in case project activity is using any fossil fuel during the Project Scenario. In accordance with this requirement PP has accounted consumption of fire wood and diesel and gasoline. The input for calculating Leakage emissions are taken from the wood&diesel&gasoline purchase records/WDP/ and it is found in accordance with the Monitoring plan. In project situation, the amount of leakage could be calculated below: ***Project leakage = Leakage per Unit * Total distributed water purifier units*** And Leakage per unit = Weight of wood per m^3 * Quantity of wood purchased for factory * Carbon content in wood* f_{NRB} * (molecular weight of CO_2/molecular weight of Carbon) / conversion from kg to tonnes / number of units sold in this monitoring period Based on above formula, PP has calculated the value of 0.012 tCO_2e per water filter per year. This is a calculated value and the important inputs to arrive at this factor is consumption of Wood in Factory for firing of Pots (Baking Process). PP has used Specific formula provided in the approved 2nd Crediting Period PDD. The Application of Formula found correct and the input values are taken from Wood purchase records. The evidence of "HSE_CP2_MP3_Wood&Diesel_Purchase"/WDP/ is checked and the value is verified as correct. Also the Wood purchase invoices/WPI/ during this MP is cross checked with the record, and is verified that the value used in the MR is correct. During the monitoring period totally 996.5 m^3 wood was purchased and this value is transparently used to arrive at the final value of **0.012** tCO_2e for further calculations. During remote verification it was confirmed that the usage of Diesel&Gasoline for power generation at factory is negligible and is found to be less than 0.1% of total emissions and hence it is excluded from the leakage emissions.

	PP has provided a transparent calculation process in the Monitoring report, for the exclusion of emissions on account of consumption of diesel for power generation at Hydrologic Factory. Verification Team verified Diesel&Gasoline purchase records "HSE_CP2_MP3_Wood&Diesel_Purchase"/WDP/ and confirmed that totally 10,400 liters of Diesel and 210 liters of Gasoline were purchased and consumed during Monitoring period. Also the Diesel&Gasoline purchase invoices/DGPI/ during this MP is cross checked with the record, and is verified that the value used in the MR is correct. The calculation done is found conservative and PP has used IPCC default value for diesel emission factor/IPCC/. PP has only used the Fire wood consumption for calculating Leakages due to implementation of Project, based on the value of 0.012 tCO_2e per water filter per year, the total leakage during this monitoring period is calculated as 2,302 tCO_2e. PP has not considered the leakages due to elimination of lower carbon emission method of Water treatment. PP has provided a justification for excluding this emission. The justification found correct as there is no water treatment in use which has a lower emissions – this decision is taken based on the results of project survey done by the PP. The exclusion is found correct and hence acceptable.	
Findings	☐	The calculation of the leakage was found to be fully compliant with the above stated principles. The calculations of leakage have been carried out in accordance with the formulae and methods described in the registered PDD, Transition Annex and the applied methodology. Any assumptions used in leakage calculations have been justified. Appropriate emission factors, IPCC default values and other reference values have been correctly applied. No errors, miscalculations, omissions, misstatements or incomplete information has been identified.
	☒	The verification team has identified mistakes in the leakage value result or the underlying calculation approaches.
	☒	In this context the following CARs, CLs, FARs have been raised: - CAR 09
Conclusion	☐	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	☒	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	It can be confirmed that the leakage calculation is overall correct.	

E.8.4. Calculation of net benefits 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 1 Net Benefits*** Net benefit (a) of SDG1 = Baseline Impact (a) of SDG1 – Project impact (a) of SDG1 Net benefit (b) of SDG1 = Baseline Impact (b) of SDG1 – Project impact (b) of SDG1 Net benefit (c) of SDG1 = Project impact (c) of SDG1 – Baseline Impact (c) of SDG1 Net benefit (d) of SDG1 = Project impact (d) of SDG1 – Baseline Impact (d) of SDG1

Indicator	Unit	Project impact	Baseline Impact	Net benefits
SDG1 (a) Biomass use	t	22,547	88,087	65,540
SDG1 (b) LPG use	t	509	1,465	956
SDG1 (c) % of HH noted on money save	%	82.10	0	82.10

SDG1 (d) of % of HH noted on time save	%	91.20	0	91.20

Goal 3 Net Benefits

Net benefit of SDG3 = Project impact of SDG3 (566,367) - Baseline Impact of SDG3 (0)

= 566,367 people

Goal 5 Net Benefits

Net benefit of SDG 5 = Project impact of SDG5 (253,713) – Baseline Impact of SDG5 (0)

=253,713 people

Goal 6 Net Benefits

Net benefit of SDG 6 = Project impact of SDG5 (746,201) – Baseline Impact of SDG6 (0)

=746,201 people

Goal 7 Net Benefits

Net benefit of SDG 7 = Project impact of SDG7 (1,028) – Baseline Impact of SDG7 (0)

=1,028 TJ

Goal 8 Net Benefits

Net benefit of SDG 8 = Project impact of SDG8 (85) – Baseline Impact of SDG8 (0)

=85 people

Goal 13 Net Benefits

In accordance with applied methodology, registered PDD and validation report,

Net benefit of SDG 13 = baseline emission – project emission – leakage emission

= 129,807 tCO_2e - 33,627 tCO_2e -2,302 tCO_2e

= 93,878 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)
01/01/2020-31/12/2020	129,807	33,627	2,302	93,878
Total	**129,807**	**33,627**	**2,302**	**93,878**

Goal 15 Net Benefits

Net benefit of SDG 15 = Project impact of SDG15 (404) – Baseline Impact of SDG15 (0)

=404 Hectare

All the figures as per the monitoring report were cross-checked by the verification team against basic monitored data. Refer to Appendix 5 for details. The following sources of information have been used in this context:

- /MR/
- /PDD/
- /TPDDTEC/
- /XLS/

Findings	☐	The calculation of the net benefits or direct calculation for each SDG impact was found to be fully compliant with the above calculation.

		The calculations of net benefits or direct calculation for each SDG impact have been carried out in accordance with the formulae and methods described in the Transition Annex. No errors, miscalculations, omissions, misstatements or incomplete information has been identified.
	☒	The verification team has identified mistakes in the net benefits or direct calculation for each SDG impact or the underlying calculation approaches.
	☒	In this context the following CARs, CLs, FARs have been raised: - CAR 10
Conclusion	☐	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	☒	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	It can be confirmed that the net outcome calculation is overall correct.	

E.8.5. Comparison of actual value of outcomes 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 for each SDG. Conclusion is as below table

Item	Indicator	ex ante values estimated	Actual values achieved during MP
SDG 1 (a)	The amount of biomass save (tons)	60,063	65,540
SDG 1 (b)	The amount of LPG save (tons)	868	956
SDG 1 (c)	% Of household noted on money save after using the project technology	88.20%	82.10%
SDG 1 (d)	% Of household noted on time save after using the project technology	89.60%	91.20%
SDG 3	Number of people who notice less smoke in kitchen after having water filter	698,148	566,367
SDG 5	Number of women and girls benefiting from stop/reduce boiling water and collecting/purchasing cooking fuel	327,289	253,713
SDG 6	Number of people access to safe drinking water	763,838	746,201
SDG7	Amount of energy saves from avoiding boiling water in the project activity	942	1,028
SDG 8	The number of new job created by the project with safe and healthy work environment	105	85
SDG 13	Amount of emission (tCO_2e)	85,834	93,878

	SDG15	The areas of forest save (Hectare)	370	404
	It has further checked which of the below listed cases is applicable for the calculated GS VER of the current monitoring period.			
Findings	☐	All the SDG (except 13) actual value of outcomes was found to be proportionally higher than the ex ante determined value. No further action is deemed required.		
	☐	All the SDG (except 13) actual value of outcomes was found to be proportionally lower than the ex ante determined value. Further clarification is deemed required.		
	☒	SDG1, SDG7, SDG13, SDG15 actual value of outcomes was found to be proportionally higher than the ex ante determined value and SDG3, SDG5, SDG6, SDG8 actual value of outcomes was found to be proportionally lower than the ex ante determined value. Further clarification is deemed required.		
	☐	*SDG 13: Case 1:* The ex-ante estimated value was found to be proportionally higher than the ex-post determined value. No further action is deemed required.		
	☐	*SDG 13: Case 2:* The ex-ante estimated value fits very good to the actually monitored value. No further justification is deemed required.		
	☒	*SDG 13: Case 3:* The ex-ante estimated value was found to be proportionally lower than the ex-post determined value.		
	☐	In this context the following CARs, CLs, FARs have been raised: - N/A		
Conclusion	☒	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.		
	☐	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.		
	The MR includes a summary table of comparison of actual values of the monitoring period with the estimations in the registered PDD for each SDG.			

E.8.6. Remarks on difference from estimated value in approved PDD

Means of verification

On the basis of the above comparison of actual values of the monitoring period with the estimations in the approved 2nd crediting period PDD the verification team has checked whether (in case 3) an appropriate explanation is included in the MR.

Via checking the explantions of the differences, it is verified that during this monitoring period, the below paramteres which are the decisive factors that influence the SDG, the reason is confirmed as accurate and plausible as below justifications.

Parameters	Estimated	Actual this MP	Justification
$U_{p,y}$	80.5%	83.18%	Usage rate is checked as higher than that applied in PDD/PDD/ and also higher than that of CP2-MP2 (82.62%)/VER/. Via interview with the office staffs/I4/ and filed staffs/I2/, it is verified that the usage rate improved by introducing the new after-sale service strategy since 2018, the door to door following up was conducted to uders who bought the CWP by loan. Furthermore, PP conducted general hygiene campaign by attaching it to the sale meeting. PP also conducted

				hygiene survey in addition to project and usage survey. Via checking the Hygiene Champaign Attendant list 2020/HCAL/, it is verified that 113,246 people joined the hygiene campaign in this MP, which may enhance the awareness of using the CWP more frequently.
	Units sold	50,412	33,746	The CWP sold during this MP is less than the PDD estimation. Via interview with the salels staff and PP, it is verified that the PDD value was estimated basing on the actual figure since 2013 and sales trend, however, the actual sales dropped significantly in 2018 due to Hydrologic staff restructuring and the general election in Cambodia which limited the promotion activity in the communities. Via the sales record/SR/, it is confirmed that during this MP (2020), the total sale from Jan to Dec was slightly lower than that of year 2019 being 33,746 and 35,061 CWPs respectively. This might be due to pandemic CoVid 19 since 2020.
	% of passing Water Quality test	80.00%	90%	The passing rate of water quality test is higher than that projected in PDD. PP conducted general hygiene campaign by attaching it to the sale meeting. PP also conducted hygiene survey in addition to project and usage survey. Via checking the Hygiene Champaign Attendant list 2020/HCAL/, it is verified that 113,246 people joined the hygiene campaign in this MP, which may enhance the awareness of hygiene and operation and maintenance knowledge of CWP's users.

Findings	☐	No further justification or explanation is deemed required as actual emissions of this MP do not exceed significantly the ex-ante calculated emission reductions (applicable for case 1 and 2).
	☒	*For SDG13 case 3:* The PP has provided a related justification in the MR. The reasons for the increase are as follows: - It is confirmed that the ex-post determined value was found to be 9.10% higher than ex-ante estimated value the for this project during this monitoring period.
	☒	In this context the following CARs, CLs, FARs have been raised: - CAR 11
Conclusion	☐	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	☒	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	It is confirmed that the ex-post determined value was found to be 9.10% higher than ex-ante estimated value the for this project during this monitoring period. The clarification have been justified by VVB.	

E.9. Stakeholder inputs and legal disputes

Means of verification

As confirmed through interview with the users, it is verified that the Grievance Mechanism/Continues Inputs has been in place. As per the interview with the users, it is inspected that two hotline numbers are available on the warranty certificate, sticker on the CWP and related leaflets; and as per interviewed with the users, it is verified that they have access to provide issues or comments through hotlines about the status of CWP.
And via checking the "HSE_CP2MP3_Hotline Tracking Record 2020"/HTR/ and "HSE_CP2MP3_Replacement Record 2020"/CPRR/, it is observed that the number of replacement parts is higher than that of reported in hotlines, so it is confirmed that the issues raised by users through telephone access have been considered by the PP and proper action has been taken to solve the problems. After that, it is verified that there are no comments/complaints received from the users during this monitoring period of the project activity.
Via checking the website of http://www.hydrologichealth.com/wp-content/uploads/2011/03/HSE_CP2_LSC_20170926_final.pdf, it is confirmed that the contact information of PP and GS has been published as part of grievance mechanism during the monitoring period, and via checking the website, it is verified there is no comments raised.
Furthermore, during the conference call with PP, by video checking the grievance book, it is confirmed that there is no grievance raised during this monitoring period.

For the stakeholder mitigations that were agreed to be monitored which has been listed in the GS passport/GSP/ that assessed as above

Sustainability indicators/Stakeholder mitigations	Assessment
To address the concern of high price of CWP, the calculation of the CWP is based on the break-even price of the water filter +10% markup price if there is no carbon finance	The PP keeps track of the break-even price of CWPs to ensure that end users are buying a subsidized CWP compared to the real costs of the CWP as shown in the document "HSE-CP2MP3-Break Even Price_Jan-Dec 20"/BEP/. This has been checked with report of "HSE Price of Water filters_Jan-Dec 20"/PWF/ and financial statements for the financial year ended 31/12/2020 "Carbon Expense-Up to Dec 20"/CE/. The report of "HSE-CP2MP3-Break Even Price_Jan-Dec 20"/BEP/ states that the average price for Super Tunsai ($35.31) is slightly higher than the break-even price +10% profit margin ($34.64), but the average price for regular Tunsai ($12.36) is much lower than the break-even price +10% profit margin ($29.46). Thus, the average price for all the types of water filter is verified as within its break-even price + 10% profit margin. The Average price of the Filter is confirmed by checking the monitoring survey report/MSR/, which is in accordance with the project requirement and it also confirmed that the filter is reaching the end user at affordable cost.
To address the concern of the place where the clay is taken, Hydrologic will buy the clay only from the licensed brick manufacturing factory that authorized by the Ministry of Industry and Handicraft.	Via interview with staffs from factory, it is confirmed that PP has not purchased clay for this monitoring period because they have enough stock from its previous purchase in 2018 from a nearby licensed brick factory, and the factory has been checked during the previous site visit by VVB.
To address the concern of	Via checking the monitoring survey report/MSR/,

	corruption, the field Surveys will monitor and ask how much are people paying for the water filters and assess that the prices are not unreasonable. If the prices are unreasonable, PP shall investigate the reason and take appropriate action. PP believes that this risk is low because there are so many sales people that competition will keep the price low	it is confirmed that the mean purchase price for Tunsai and Super Tunsai is $0.00 (donation from NGOs to users) and $41.80, both of which are in line with current pricing as listed in the report of "HSE Price of Water filters_Jan-Dec 20"/PWF/. Hence it is concluded that the prices are reasonable.	
	PP has established adequate arrangements for monitoring and measurement of the sustainability indicators. The Data collected through Surveys found properly analyzed to arrive at the conclusion. The claims made by the PP towards compliance of the Sustainability indicatory are correct.		
Findings	☐	The Grievance Mechanism/Continues Inputs has been in place. No adverse finding has been identified in the course of this verification.	
	☒	The respective requirements have widely been complied with; however; the following issues needed to be addressed in this context:	
		- CL 05	
Conclusion	☐	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.	
	☒	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.	
	All the methods of continuous input /grievance mechanism are confirmed during remote verification process. After the replacement, there are no comments/complaints received from the stakeholders during this monitoring period of the project activity.		

SECTION F. Internal quality control

Before the submission of the final verification report a technical review of the whole verification procedure was carried out. The technical reviewers are competent GHG auditors being appointed for the scope this project falls under. The technical reviewers are not considered to be part of the verification team and thus not involved in the decision making process up to the technical review.

As a result of the technical review process the verification opinion and the topic specific assessments as prepared by the verification team leader may have been confirmed or revised. Furthermore reporting improvements might have been achieved.

After the successful technical review an overall (esp. procedural) assessment of the complete verification has been carried out by a senior assessor located in the accredited premises of TÜV NORD.

After this step the submission for requesting for issuance is conducted.

SECTION G. Verification opinion

Hydrologic Social Enterprise, Ltd. has commissioned the TÜV NORD JI/CDM Certification Program to carry out the Gold Standard 3rd periodic verification for 2nd crediting period of the project: “Production and dissemination of Ceramic Water Purifiers by Hydrologic, in the Kingdom of Cambodia”, with regard to the relevant requirements for GS4GG project activities. The project reduces GHG emissions by reduce / eliminate the water boiling practice after using the Ceramic Water Purifiers and thereby reduce the CO_2 emissions due to less usage of fossil fuel. This verification covers the period from 01/01/2020-31/12/2020 (Including both days).

As a result of this verification, the verifier confirms that:

- all operations of the project are implemented and installed as planned and described in the validated and latest approved project design document.
- the monitoring plan is in accordance with the applied approved GS methodology, i.e., Technologies and Practices to Displace Decentralized Thermal Energy Consumption - version 3.0, July 2015.
- Installed equipments being essential for generating emission reduction run reliably and are calibrated appropriately.
- Installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately.
- the monitoring report is in accordance with the relevant GS4GG requirements.
- the project contributes to sustainable development goals (SDG).
- the monitoring system is in place and functional.
- one FAR was raised and will be checked during next verification process.

The project has generated GHG emission reductions.

SECTION H. Certification statement

As a duly accredited VVB, TÜV NORD CERT confirms that the project

"Production and dissemination of Ceramic Water Purifiers by Hydrologic, in the Kingdom of Cambodia"

registered under

GS-No. : 1020

has achieved impact for each SDG in accordance with all applicable requirements for registered GS4GG project activities during the current monitoring period

MP-No.: 3rd of 2nd crediting period

from: 01/01/2020

to: 31/12/2020

(including both days) as follows:

The verified amount of impact for each SDG in the project activity as per commitment period is stated below;

Item	Indicator	Total verified amount of impact for this MP
SDG 1 (a)	The amount of biomass save (tons)	65,540
SDG 1 (b)	The amount of LPG save (tons)	956
SDG 1 (c)	% Of household noted on money save after using the project technology	82.10%
SDG 1 (d)	% Of household noted on time save after using the project technology	91.20%
SDG 3	Number of people who notice less smoke in kitchen after having water filter	566,367
SDG 5	Number of women and girls benefiting from stop/reduce boiling water and collecting/purchasing cooking fuel	253,713
SDG 6	Number of people access to safe drinking water	746,201
SDG7	Amount of energy saves from avoiding boiling water in the project activity	1,028
SDG 8	The number of new job created by the project with safe and healthy work environment	85
SDG 13	Amount of emission reductions (tCO_2e)	93,878
SDG15	The areas of forest save (Hectare)	404

Beijing, 15/06/2021

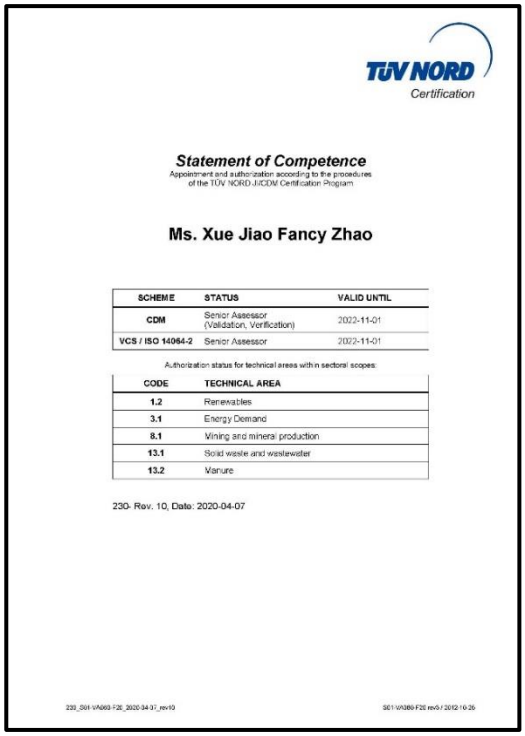
Fancy Zhao

Zhao Xuejiao
Team Leader

Appendix 1. Abbreviations

Abbreviations	Full texts
ARC	Angkor Research Consulting
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CL	Clarification Request
CO_2	Carbon dioxide
CO_{2eq}	Carbon dioxide equivalent
CP	Crediting Period
CPII	Second Crediting Period
CWP	Ceramic Water Purifier
DverR	Draft Verification Report
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GS	Gold Standard
GSR	Gold Standard Requirement
GST	Gold Standard Toolkit
GSP	Gold Standard Passport
HSE	Hydrologic Social Enterprise, Ltd.
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-Governmental Organization
PA	Project Activity
PDD	Project Design Document
PP	Project Participant
PS	Project Survey/Project Standard
QA/QC	Quality Assurance / Quality Control
SD	Sustainability Development
SDI	Sustainability Development Indicator
SDM	SD Matrix
SN	Serial Number
UNFCCC	United Nations Framework Convention on Climate Change
VER	Voluntary Emission Reduction
VVS	Validation and Verification Standard
WBT	Water Boiling Test
WCFT	Water Consumption Field Test
XLS	Emission Reduction Calculation Spread Sheet

Appendix 2. Competence of team members and technical reviewers



TÜV NORD Certification

Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Ms. Xue Jiao Fancy Zhao

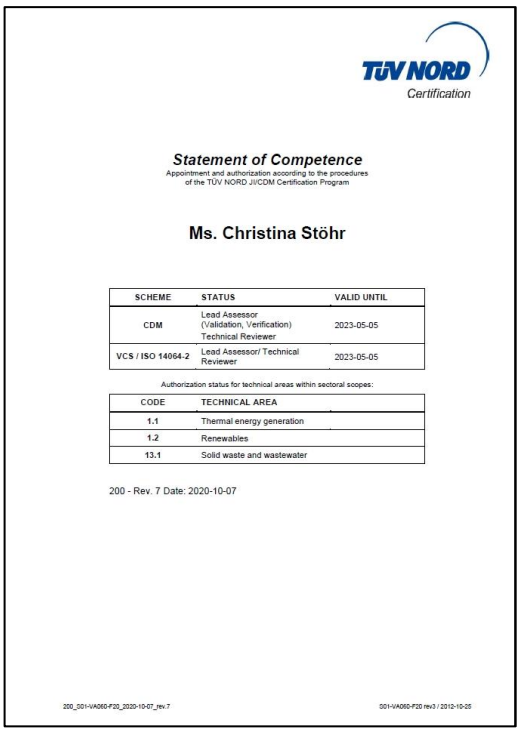
SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification)	2022-11-01
VCS / ISO 14064-2	Senior Assessor	2022-11-01

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
3.1	Energy Demand
8.1	Mining and mineral production
13.1	Solid waste and wastewater
13.2	Manure

230- Rev. 10, Date: 2020-04-07

230_S01-VA060-F20_2020-04-07_rev10 S01-VA060-F20 rev3 / 2012-10-25



TÜV NORD Certification

Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Ms. Christina Stöhr

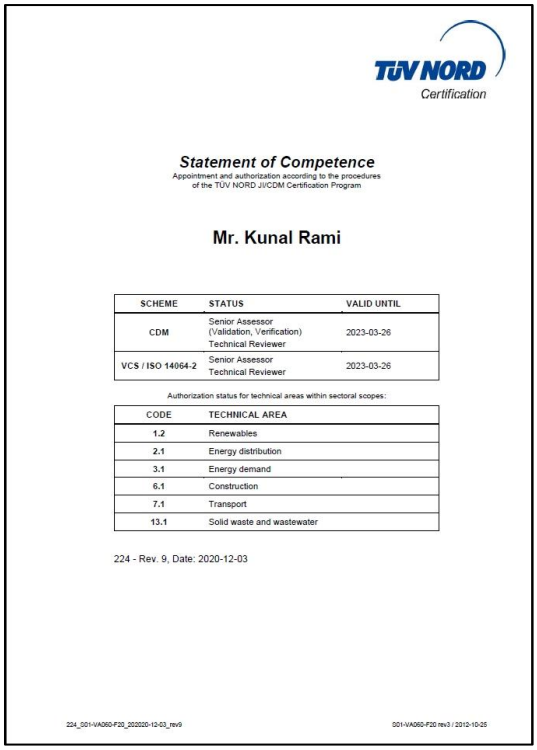
SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor (Validation, Verification) Technical Reviewer	2023-05-05
VCS / ISO 14064-2	Lead Assessor/ Technical Reviewer	2023-05-05

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.1	Thermal energy generation
1.2	Renewables
13.1	Solid waste and wastewater

200 - Rev. 7 Date: 2020-10-07

200_S01-VA060-F20_2020-10-07_rev.7 S01-VA060-F20 rev3 / 2012-10-25



TÜV NORD Certification

Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Kunal Rami

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2023-03-26
VCS / ISO 14064-2	Senior Assessor Technical Reviewer	2023-03-26

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
2.1	Energy distribution
3.1	Energy demand
6.1	Construction
7.1	Transport
13.1	Solid waste and wastewater

224 - Rev. 9, Date: 2020-12-03

224_S01-VA060-F20_202020-12-03_rev9 S01-VA060-F20 rev3 / 2012-10-25

Note: The scope of the project is Scope: 1&3

The verification team leader and TR/approver have the related Scope as per the above statement of competence and both have been approved by GS as GS project auditor which can be seen from GS website.

Appendix 3. Documents reviewed or referenced

	Author	Title	References to the document	Provider
1.	PP	Break Even Price/BEP/	"HSE-CP2MP3-Break Even Price_Jan-Dec 20"	PP
2.	Hydrologic Enterprise Ltd.&Factory	Business License/BL/	Business License of Hydrologic Enterprise Ltd. and its full-fledged factory situated in Trapeang Samrong Village	PP
3.	Angkor Research Consulting	Baseline Report/BSR/	Baseline report: Angkor Research and Consulting (2017) "Baseline Survey Report on Ceramic Water Purifier by Hydrologic in the Kingdom of Cambodia".	PP
4.	PP	Calibration records/CAL/	ARC_Hydrologic Calibration&Inventory_2020_EN	PP
5.	PP	Carbon Expense /CE/	"Carbon Expense-Up to Dec 20"	PP
6.	Angkor Research Consulting	C_j & X_{boil} calculation sheet/CJX/	HSE_CP2_Cj&Xboil_20171023	PP
7.	GS	COVID 19: INTERIM MEASURES/COV/	COVID 19: INTERIM MEASURES issued by GS on 18.12.2020, Version 3, and valid to 30/06/2021	PP
8.	PP	CWP parts' replacement record/CPRR/	HSE_CP2MP3_Replacement Record 2020	PP
9.	PP	CWP specifications /CWPS/	CWP specifications for two models	PP
10.	GS	Design Change Review/DCR/	"GS1020_Design Change Review_final 2014-03-27" issued by GS	PP
11.	PP	Diesel&Gasoline purchase invoices/DGPI/	Diesel&Gasoline purchase invoices during this MP in year 2020	PP
12.	Nexus for Development	ER calculations – CP2/ERCP2/	CP2-5_HSE_CP2_ER_Cal_20171023	PP
13.	PP	Employment_ Record&Income_ Generation/ERIG/	HSE_CP2-MP3_Em&Inc2020	PP
14.	Food and Agriculture Organization of the United Nations	Global Forest Resources Assessment 2015/GFRA/	Global Forest Resources Assessment 2015	PP
15.	PP	Hygiene Campaigns Meetings Records/HCAL/	Hygiene Champaign Attendant list 2020	PP
16.	PP	Health and Safety Precautions/HSP/	OHS_Policy_Occupational_Health_Safety_English	PP
17.	PP	Hotline Tracking Record/HTR/	"HSE_CP2MP3_Hotline Tracking Record 2020"	PP
18.	PP and staffs	Labor Contract/LC/	Sampled employment contracts including office staff, field staff and factory staff	PP
19.	Nexus for Development	Monitoring_Flow /MF/	"HSE_CP2MP3_ Monitoring_Flow"	PP

	Author	Title	References to the document	Provider
20.	Nexus for Development	Monitoring Report/MR/	Monitoring Report for CP2MP3 of Production and dissemination of Ceramic Water Purifiers by Hydrologic, in the Kingdom of Cambodia • Draft version 1.0, dated 21/03/2021 • Version 2.0, dated 23/04/2021 • Version 3.0, dated 07/05/2021 • Version 4.0, dated 12/06/2021 • Final version 5.0, dated 07/07/2021	Nexus for Development
21.	Angkor Research Consulting	Monitoring Survey Report/MSR/	Monitoring Survey Report- "ARC_HSE_CP2-MP3_2021_Final_Report_V8_Clean"	PP
22.	PP	Salary payment/PAY/	Monthly payroll of all staffs during this MP	PP
23.	PP	Project database/PD/	Project database- "HSE_CP2MP3_Project_Database", which containing the contact details of all end users, to the extent possible.	PP
24.	PP	Price of Water filters/PWF/	"HSE Price of Water filters_Jan-Dec 20"	PP
25.	Angkor Research Consulting and PP	Monitoring Survey Questionnaires /QUE/	Monitoring Survey Questionnaires filled by user samples.	PP
26.	PP and users, retailers and NGOs	Sales invoices of CWP/SICWP/	60 samples - Sales invoices of CWP during this MP.	PP
27.	PP	Staff List/SL/	Hydrologic Staff List	PP
28.	Nexus for Development	Sample number calculation/SNC/	Sampling Frame for CP2-MP3	PP
29.	Nexus for Development	Sample number calculation/SNC-MP1/	Sampling Frame for CP2-MP1	PP
30.	PP	Serial Numer of CWP/SNCWP/	Serial number2020	PP
31.	Nexus for Development and PP	Sampling Protocol/SP/	ARC_Hydrologic Study 2020_Sampling Protocol_v2	PP
32.	PP	Sales record/SR/	i. Sales record during the previous monitoring period from 01/12/2010 to 31/12/2019 ii. For this MP: HSE_CP2MP3_Sales_Database	PP
33.	Nexus for Development	GS4GG transition Annex/TA/	GS4GG transition Annex for the project activity	PP
34.	PP and carbon consultant from Nexus	Training records/TRA/	- Factory staff training records including satefy, first aid, health, etc. - Trainings related to "Hygiene" included into sale training course - Database refreshing training to PP's customer service team in Oct. 2020	PP

	Author	Title	References to the document	Provider
35.	Nexus for Development	GS4GG transition review form and approval/TRFA/	GS4GG transition review form and approval for the project activity dated on 30/10/2019	PP
36.	PP	Wood&Diesel_Record/WDP/	HSE_CP2_MP3_Wood&Diesel_Purchase	PP
37.	PP	Wood purchase invoices/WPI/	Wood purchase invoices during this MP	PP
38.	Nexus for Development	Water Quality Test Protocol/WQTP/	HSE_CP2-MP3_WQ_protocol	PP
39.	Institut Pasteur du Cambodge	Water Quality Test Reports/WQTR/	Water Quality Test Reports_CP2_MP3	PP
40.	Institut Pasteur du Cambodge	Water Quality Test Summary /WQTS/	Document summary - HSE_CP2-MP3_Water_Quality_Result	PP
41.	Nexus for Development	Emission Reduction Calculation Sheets/XLS/	Emission Reduction Calculation sheets (related to MR for CP2MP3) • version 1.0 dated 21/02/2021 • version 2.0, dated 21/04/2021 • version 3.0, dated 12/06/2021	Nexus for Development
42.	UNFCCC	AMS-II.G/AMS-II.G/	CDM approved methodology AMS-III.AV, version 5	UNFCCC
43.	UNFCCC	AMS-III.AV/AMS-III.AV/	CDM approved methodology AMS-II.G	UNFCCC
44.	TÜV NORD JI / CDM Certification Program	CP Manual/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)	TÜV NORD JI / CDM Certification Program
45.	CDM EB	CDM-EB 77 meeting report/EB77/	CDM-EB 77 meeting report	UNFCCC
46.	Gold Standard	Issuance review/GSIR/	GS issuance review for MP3	PP
47.	Nexus for Development	Gold Standard Passport/GSP/	Gold Standard Passport for GS-VER project: “Production and dissemination of Ceramic Water Purifiers by Hydrologic, in the Kingdom of Cambodia” dated 15/01/2018, version 3.0	Gold Standard
48.	Gold Standard	GS4GG Principles& Requirements /GSPR/	Gold Standard for Global Goals Principles& Requirements, version 1.2 in Oct. 2019	Gold Standard
49.	Gold Standard	Guidelines for carrying out usage surveys /GUSW/	Gold Standard “Guidelines for carrying out usage surveys for projects implementing household water filtration technologies – 05/02/2014”	Gold Standard
50.	CDM EB	Information note on non-renewable biomass/IFNRB/	Information note on default values of fraction of non-renewable biomass for Cambodia Version 01.0	UNFCCC
51.	Intergovernmental Panel on Climate Change	IPCC Guidelines/IPCC/	• 1996 IPCC Guidelines for National Greenhouse Gas Inventories: work book • 2006 IPCC Guidelines for National Greenhouse Gas Inventories: work book	www.ipcc-nggip.iges.or.jp http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html

	Author	Title	References to the document	Provider
			• IPCC (2007) "IPCC Fourth Assessment Report: Climate Change 2007/ Climate Change 2007/Working Group I: The Physical Science Basis 2.10.2 Direct Global Warming Potential" available at [last accessed 15-06-2015]	
52.	Gold Standard	Monitoring Report Template/MRT/	Gold standard for the global goals Monitoring report template, October 2020, version 1.1	Gold Standard
53.	Nexus for Development	Project Design Document/PDD/	Approved 2nd crediting period Project Design Document for GS-VER project: "Production and dissemination of Ceramic Water Purifiers by Hydrologic, in the Kingdom of Cambodia" version 11.2, dated 05/02/2018	Gold Standard
54.	UNFCCC	Guideline of Sampling and surveys/SSG/	Guideline of Sampling and surveys for CDM project activities and programmes of activities, version 04.0	UNFCCC website
55.	UNFCCC	Standard for Sampling and Surveys/SSS/	Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities, version 08.0	UNFCCC website
56.	Gold Standard	Applied Methodology/TPDDTEC/	Approved GS Methodology: "Technologies and Practices to Displace Decentralized Thermal Energy Consumption – version 3.0, July 2015"	GS Website
57.	VVB	Validation Report/VAL/	2nd crediting period Validation Report for GS project "Production and dissemination of Ceramic Water Purifiers by Hydrologic, in the Kingdom of Cambodia"	Gold Standard
58.	VVBs	Verification Records/VER/	Previous verifications: MRs and Verification Reports	Gold Standard
59.	Gold Standard	Water Quality Standard/WQS/	GS update rule "the Requirement for Quality Standard to be met by safe water supply projects submitted Prior to 31st January 2014"	Gold Standard
60.	Angkor Research Consulting	Angkor Research public website	http://angkorresearch.com/?page=front&lg=en	Public website
61.	Gold Standard Organization	Gold Standard/gs/	http://www.goldstandard.org/	Website
62.	IPCC	IPCC publications/ipcc/	www.ipcc-nggip.iges.or.jp	Website
63.	UNFCCC	UNFCCC/unfccc/	http://cdm.unfccc.int	Website
64.	VCS	VCS/vcs/	http://www.v-c-s.org/	Website

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

Table 1. CL from this verification

CL ID	01	**Section no.**	B.1	**Date: 18/04/2021**
Description of CL				
As per the project database, the statistic ending date was 30/06/2020, the explanation of why Households (HH) that purchased either a Tunsai or Super Tunsai ceramic water filter within the five years ending **30 June 2020** were eligible need to be clarified in section B.1.				
Project participant response (1st round)				
Based on the registered methodology TPDDTEC V3.0 (footnote 33) stated that "To ensure conservativeness, participants in a usage survey with technologies in the first year of use (age0-1) must have technologies that have been in use on average longer than 0.5 years. For technologies in the second year of use (age1-2), the usage survey must be conducted with technologies that have been in use on average at least 1.5 years, and so on". Thus, the eligible end-users for usage survey, project survey and water consumption field test are from those who purchased the filters from 01 July 2015 to 30 June 2020. This has been added in the revised MR.				
Documentation provided by project participant (1st round)				**Date: 21/04/2021**
☐	Changes in the PDD	Section(s):		New version No.:
☒	Changes in MR	Section(s): B.1		New version No.: 2.0
☐	Changes in XLS	Worksheet(s):		New version No.:
☒	Other:	/MSR/, /SP/		
DOE assessment (1st round)				**Date:** 23/04/2021
The MR is checked as reivsed, it is confirmed that PP took a sample number of 185 for usage survey which is in line with the methodology requirement as defined in the sampling protocol/SP/. It is verified that the sample number is above the minimum number requested in the applied methodology of 150. Via checking the sampling method as stated in the monitoring survey report/MSR/, it is verified that the method is in line with the PDD sampling plan/PDD/, methodology requirement/TPDDTEC/ and GS rules/GST/. The following is checked by the verification team to confirm the compliance with the applied methodology requirement "To ensure conservativeness, participants in a usage survey with technologies in the first year of use (age0-1) must have technologies that have been in use on average longer than 0.5 years. For technologies in the second year of use (age1-2), the usage survey must be conducted with technologies that have been in use on average at least 1.5 years, and so on." So the ending date was determined as 30/06/2020 is verified as in line with above request.				
Conclusion *Tick the appropriate checkbox*	☐ Additional action should be taken (finding remains open) ☒ The finding is closed			

CL ID	02	**Section no.**	D.2	**Date: 18/04/2021**
Description of CL				
For parameter $Q_{p,rawboil,y}$, it only stated that the margin of error is greater than 10%, the actual value is not provided.				
Project participant response (1st round)				
PP has added the margin of error 18.97% for parameter $Q_{p,rawboil,y}$ in the revised MR.				
Documentation provided by project participant (1st round)				**Date: 21/04/2021**
☐	Changes in the PDD	Section(s):		New version No.:
☒	Changes in MR	Section(s): D.2		New version No.: 2.0
☐	Changes in XLS	Worksheet(s):		New version No.:
☒	Other:	/MSR/		
VVB assessment (1st round)				**Date:** 23/04/2021
The revised MR is checked, it is confirmed that the value of margin of error is added. Via checking the Monitoring Survey Report/MSR/, it is confirmed that the value of upper limit is applied instead of using the mean value, due to the margin of error (18.97%) is greater than that of the tolerated value (10%) based on TPDDTEC 3.0, footnote 63, page 46.				
Conclusion *Tick the appropriate checkbox*	☐ Additional action should be taken (finding remains open) ☒ The finding is closed			

CL ID	03	Section no.	D.2	Date: 18/04/2021
Description of CL				
For parameter $Q_{p,cleanboil,y}$, it only stated that the margin of error is greater than 10%, the actual value is not provided.				
Project participant response (1st round)				
PP has added the margin of error (72.25%) for parameter $Q_{p,clearnboil,y}$ in the revised MR.				
Documentation provided by project participant (1st round)				**Date: 21/04/2021**
☐	Changes in the PDD		Section(s):	New version No.:
☒	Changes in MR		Section(s): D.2	New version No.: 2.0
☐	Changes in XLS		Worksheet(s):	New version No.:
☒	Other:		/MSR/	
VVB assessment (1st round)				**Date:** 23/04/2021
The revised MR is checked, it is confirmed that the value of margin of error is added. Via checking the Monitoring Survey Report/MSR/, it is confirmed that the value of upper limit is applied instead of using the mean value, due to the margin of error (72.25%) is greater than that of the tolerated value (10%) based on TPDDTEC 3.0, footnote 63, page 46.				
Conclusion *Tick the appropriate checkbox*	☐ Additional action should be taken (finding remains open) ☒ The finding is closed			

CL ID	04	Section no.	D.3	Date: 18/04/2021
Description of CL				
The comparison result of values between this MP and last is not clarified.				
Project participant response (1st round)				
PP has added remark on each comparison value in the revised MR.				
Documentation provided by project participant (1st round)				**Date: 21/04/2021**
☐	Changes in the PDD		Section(s):	New version No.:
☒	Changes in MR		Section(s): D.3	New version No.: 2.0
☐	Changes in XLS		Worksheet(s):	New version No.:
☐	Other:			
VVB assessment (1st round)				**Date:** 23/04/2021
The revised MR is checked, via checking the verification report of 2nd monitoring period/VER/, it is confirmed that the values are correct and based on the comparison, it is verified that the values for all the monitoring parameters are not changed significantly comparing with the 2nd monitoring period/VER/, and the reason for change has been added in the table for each parameter which is verified as correct and reasonable.				
Conclusion *Tick the appropriate checkbox*	☐ Additional action should be taken (finding remains open) ☒ The finding is closed			

CL ID	05	Section no.	G.2	Date: 18/04/2021
Description of CL				
The actual break-even price is not clarified for comparing with the actual sale price.				
Project participant response (1st round)				
The actual break-even price + 10% profit margin is added in the revised MR "based on the annual sale in this monitoring period, although the average price for Super Tunsai ($35.31) is slightly higher than the break-even price +10% profit margin ($34.64), the average price for regular Tunsai ($12.36) is much lower than the break-even price +10% profit margin ($29.46). Thus, the average price for the water filter is within its break-even price + 10% profit margin".				
Documentation provided by project participant (1st round)				**Date: 21/04/2021**
☐	Changes in the PDD		Section(s):	New version No.:
☒	Changes in MR		Section(s): G.2	New version No.: 2.0
☐	Changes in XLS		Worksheet(s):	New version No.:
☒	Other:		/BEP/	
VVB assessment (1st round)				**Date:** 23/04/2021
The revised MR is checked, it is confirmed that the actual break-even price is added. he report of "HSE-CP2MP3-Break Even Price_Jan-Dec 20"/BEP/ states that the average price for Super Tunsai ($35.31) is slightly higher than the break-even price +10% profit margin ($34.64), but the				

average price for regular Tunsai ($12.36) is much lower than the break-even price +10% profit margin ($29.46). Thus, the average price for all the types of water filter is verified as within its break-even price + 10% profit margin.	
Conclusion *Tick the appropriate checkbox*	☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Table 3. CAR from this verification

CAR ID	01	**Section no.**	Cover Page	**Date: 18/04/2021**
Description of CAR				
1. The figures in table 1 need to be updated based on the below CARs related to the ER calculation. 2. The unit for the VER valus is missing.				
Project participant response (1st round)				
1. The figures in table 1 are updated accordingly. 2. Based on the monitoring report's template guide (page 6), the figure in table 2 should be presented in product which is VERs. Hence unit is VERs and listed already.				
Documentation provided by project participant (1st round)				**Date: 21/04/2021**
☐ Changes in the PDD		Section(s):		New version No.:
☒ Changes in MR		Section(s): Cover page		New version No.: 2.0
☐ Changes in XLS		Worksheet(s):		New version No.:
☐ Other:				
DOE assessment (1st round)				**Date:** 23/04/2021
1. The revised MR is checked, it is confirmed that all the SDG impacts have been updated in the table 1 in which is verified as consistent with other parts of the MR and the values are confirmed as correct and actual. 2. The revised MR is checked, the unit is confirmed as listed.				
Conclusion *Tick the appropriate checkbox*	☐ Additional action should be taken (finding remains open) ☒ The finding is closed			

CAR ID	02	**Section no.**	B.1	**Date: 18/04/2021**
Description of CAR				
1. The actual number of end users in the project databased is not specified, revision is requested. 2. The number of all the end users who is eligible for selecting as samples is not specified, revision is requested.				
Project participant response (1st round)				
1. The actual number of end users (113,609) in the project database is added in the revised MR. 2. The number of all the end users (113,609) who is eligible for selecting as samples is added in the revised MR.				
Documentation provided by project participant (1st round)				**Date: 21/04/2021**
☐ Changes in the PDD		Section(s):		New version No.:
☒ Changes in MR		Section(s): Appendix 1		New version No.: 2.0
☐ Changes in XLS		Worksheet(s):		New version No.:
☒ Other:		/TRA/		
VVB assessment (1st round)				**Date:** 23/04/2021
1. The revised MR is checked, it is confirmed that actual number of end users in the project database is added and correct by checking the database/PD/. 2. The revised MR is checked, it is confirmed that number of all the end users who is eligible for selecting as samples is added and correct by checking the database/PD/.				
Conclusion *Tick the appropriate checkbox*	☐ Additional action should be taken (finding remains open) ☒ The finding is closed			

CAR ID	03	Section no.	B.1	Date: 18/04/2021

Description of CAR

1. It stated in the section C of the MR, Sample size is not clarified for WCFT.
2. Not only three volumetric variables were measured by WCFT, but $N_{p,y}$ is also measured by WCFT, revision is requested.
3. The actual sample size is not provided for usage survey to compare with the request in guideline.

Project participant response (1st round)

1. PP has added the sample size of 140 users for WCFT in the revised MR.
2. PP has added $N_{p,y}$ in the revised MR.
3. PP has added the sample size of 185 users for usage survey in the revised MR.

Documentation provided by project participant (1st round)		Date: 21/04/2021
☐ Changes in the PDD	Section(s):	New version No.:
☒ Changes in MR	Section(s): B.1	New version No.: 2.0
☐ Changes in XLS	Worksheet(s):	New version No.:
☒ Other:	/SNC/, /MSR/, /SP/	

VVB assessment (1st round) **Date:** 23/04/2021

1. The revised MR is checked, it is confirmed that the sample size choosing method is added for WCFT, PP took a sample number of 137 for water consumption filed test which is in line wih the 90/10 rule as defined in the sample number calculation/SNC/, and the margin of error at 90% level of confidence is less than 10%. Via checking the sampling method as stated in the monitoring survey report/MSR/, it is verified that the method is in line with the PDD sampling plan/PDD/, methodology requirement/TPDDTEC/ and GS rules/GST/.
2. The revised MR is checked, it is confirmed that the parameter Np,y is added. In this monitoring period, Water Consumption Field Test (WCFT) was conducted in December 2020 together with usage survey and proejct survey. The Water Consumption Field Test (WCFT) measures the project-supplied clean water consumption volumes and boiling. The WCFT is conducted with end-users representative of project scenario target population and currently using the CWP. The WCFT is verified as in line with the requirement in the PDD sampling plan/PDD/ and methodology requirement/TPDDTEC/. This means that three volumetric variables including $Q_{P,y}$, $Q_{P,rawboil,y}$, $Q_{P,cleanboil,y}$ and $N_{p,y}$ are measured by WCFT.
3. The revised MR is checked, it is confirmed that the sample size choosing method is added for usage survey. The sampling protocol for this MP/SP/ and monitoring survey report/MSR/ are verified by the verification team, it is confirmed that the sample size determination for usage survey (total 185 and each age is more than 30) is in line with the methodology requirement that "the minimum total sample size is 100, with at least 30 samples for project technologies of each age being credited"/TPDDTEC/.

Conclusion *Tick the appropriate checkbox*	☐ Additional action should be taken (finding remains open) ☒ The finding is closed

CAR ID	04	Section no.	D.2	Date: 18/04/2021

Description of CAR

For parameter $N_{p,y}$, the value is not correct due to there were 366 days in year 2020, revision is requested.

Project participant response (1st round)

Documentation provided by project participant (1st round)		Date: 21/04/2021
☐ Changes in the PDD	Section(s):	New version No.:
☒ Changes in MR	Section(s): D.2	New version No.: 2.0
☐ Changes in XLS	Worksheet(s):	New version No.:
☒ Other:	/WQTR/,/MSR/,/MF/,/SP/	

DOE assessment (1st round) **Date:** 23/04/2021

The revised MR is checked, it is confirmed that the value is updated based on the recalculation with days of 366 of year 2020. The revised value is confirmed as correct.

Conclusion *Tick the appropriate checkbox*	☐ Additional action should be taken (finding remains open) ☒ The finding is closed

CAR ID	05	Section no.	D.2	Date: 18/04/2021
Description of CAR				
For parameter $LE_{p,y}$, the value of Quantity of wood purchased for factory is not consistent with the evidence, revision is requested.				
Project participant response (1st round)				
Documentation provided by project participant (1st round)				**Date: 21/04/2021**
☐	Changes in the PDD	Section(s):		New version No.:
☒	Changes in MR	Section(s): D.2		New version No.: 2.0
☐	Changes in XLS	Worksheet(s):		New version No.:
☒	Other:	/WDP/, /WPI/		
VVB assessment (1st round)				**Date:** 23/04/2021
The revised MR is checked, it is confirmed that the value of Quantity of wood purchased for factory is revised to be consistent with the evidence of HSE_CP2_MP3_Wood&Diesel_Purchase/WDP/ and cross checked with the Wood purchase invoices/WPI/.				
Conclusion *Tick the appropriate checkbox*	☐ Additional action should be taken (finding remains open) ☒ The finding is closed			

CAR ID	06	Section no.	D.2	Date: 18/04/2021
Description of CAR				
For the calculation result of emission reduction, due to the days of year 2020 was wrongly used as 365, the ER value is not correct, revision is requested.				
Project participant response (1st round)				
Documentation provided by project participant (1st round)				**Date: 21/04/2021**
☐	Changes in the PDD	Section(s):		New version No.:
☒	Changes in MR	Section(s): D.2		New version No.: 2.0
☒	Changes in XLS	Worksheet(s): all		New version No.: 2.0
☐	Other:	/XLS/		
VVB assessment (1st round)				**Date:** 23/04/2021
The revised MR and ER sheet are checked, it is confirmed that the ER calculation is updated in both docs, and the result is confirmed as correct.				
Conclusion *Tick the appropriate checkbox*	☐ Additional action should be taken (finding remains open) ☒ The finding is closed			

CAR ID	07	Section no.	E.1	Date: 18/04/2021
Description of CAR				
For the calculation result of baseline emission, due to the days of year 2020 was wrongly used as 365, the BE value is not correct, revision is requested.				
Project participant response (1st round)				
Documentation provided by project participant (1st round)				**Date: 21/04/2021**
☐	Changes in the PDD	Section(s):		New version No.:
☒	Changes in MR	Section(s): E.1		New version No.: 2.0
☐	Changes in XLS	Worksheet(s): all		New version No.: 2.0
☐	Other:			
DOE assessment (1st round)				**Date:** 23/04/2021
The revised MR and ER sheet are checked, it is confirmed that the BE calculation is updated in both docs, and the result is confirmed as correct.				
Conclusion *Tick the appropriate checkbox*	☐ Additional action should be taken (finding remains open) ☒ The finding is closed			

CAR ID	08	Section no.	E.2	Date: 18/04/2021

Description of CAR

1. The values provided in table 6 Project estimation for SDG1 are not consistent with the ER sheet. Revision is requested.
2. The number of people for SDG 3 is not correct.
3. The value of amount of energy saves from avoiding boiling water for SDG 7 is not correct.
4. For the calculation result of project emission, due to the days of year 2020 was wrongly used as 365, the PE value is not correct, revision is requested.

Project participant response (1st round)

Documentation provided by project participant (1st round)		Date: 21/04/2021
☐ Changes in the PDD	Section(s):	New version No.:
☒ Changes in MR	Section(s): E.2	New version No.: 2.0
☒ Changes in XLS	Worksheet(s): all	New version No.: 2.0
☐ Other:		

VVB assessment (1st round) **Date:** 23/04/2021

1. The values are checked as updated and consistent with the ER sheet.
2. The revised number of people for SDG 3 is confirmed as correct.
3. The revised value of amount of energy saves from avoiding boiling water is confirmed as correct.
4. The revised MR and ER sheet are checked, it is confirmed that the PE calculation is updated in both docs, and the result is confirmed as correct.

Conclusion *Tick the appropriate checkbox*	☐ Additional action should be taken (finding remains open) ☒ The finding is closed

CAR ID	09	Section no.	E.3	Date: 18/04/2021

Description of CAR

For the calculation result of leakge emission, due to the days of year 2020 was wrongly used as 365, the leakage value is not correct, revision is requested.

Project participant response (1st round)

Documentation provided by project participant (1st round)		Date: 21/04/2021
☐ Changes in the PDD	Section(s):	New version No.:
☒ Changes in MR	Section(s): E.3	New version No.: 2.0
☒ Changes in XLS	Worksheet(s): leakage	New version No.: 2.0
☐ Other:		

VVB assessment (1st round) **Date:** 23/04/2021

The revised MR and ER sheet are checked, it is confirmed that the leakage calculation is updated in both docs, and the result is confirmed as correct.

Conclusion *Tick the appropriate checkbox*	☐ Additional action should be taken (finding remains open) ☒ The finding is closed

CAR ID	10	Section no.	E.4	Date: 18/04/2021

Description of CAR

The value of Net benefit of SDG15 is not correct.

Project participant response (1st round)

Documentation provided by project participant (1st round)		Date: 21/04/2021
☐ Changes in the PDD	Section(s):	New version No.:
☒ Changes in MR	Section(s): E.4	New version No.: 2.0
☐ Changes in XLS	Worksheet(s):	New version No.:
☐ Other:		

VVB assessment (1st round) **Date:** 23/04/2021

The value is checked as revised and consistent with the ER sheet.

Conclusion *Tick the appropriate checkbox*	☐ Additional action should be taken (finding remains open) ☒ The finding is closed

CAR ID	11	Section no.	E.6	Date: 18/04/2021
Description of CAR				
1. For $U_{p,y}$ in the table, the value is not consistent with other parts of MR. 2. For $U_{p,y}$ in the table, the comparison listed the value of CP2-MP1 but not MP2, revision is requested.				
Project participant response (1st round)				
Documentation provided by project participant (1st round)				**Date: 21/04/2021**
☐ Changes in the PDD		Section(s):		New version No.:
☒ Changes in MR		Section(s): E.1		New version No.: 2.0
☐ Changes in XLS		Worksheet(s):		New version No.:
☒ Other:		/PAY/,/LC/,/SL/		
VVB assessment (1st round)				**Date:** 23/04/2021
1. The revised MR is checked, it is confirmed that the value is checked as revised and consistent in the whole MR. 2. The revised MR is checked, it is confirmed that the comparison is updated between the value for this MP and CP2-MP2.				
Conclusion *Tick the appropriate checkbox*	☐ Additional action should be taken (finding remains open) ☒ The finding is closed			

Table 3. FAR from this verification

FAR ID	01	Section No.	G.2	Date: 15/06/2021
Description of FAR				
Section G.2: I It shall be clearly confirmed whether any mitigation measures have been agreed to be monitored for the next monitoring period.				
Project participant response				**Date:** 15/06/2021
For the next monitoring period, all the three below items will continue to be monitored. (1) The concern of high price of CWP: to address the concern of high price of CWP, the calculation of the CWP is based on the break-even price of the water filter +10% markup price if there is carbon finance. (2) The concern of the place where the clay is taken: to address the concern of the place where the clay is taken, Hydrologic will buy the clay only from the licensed brick manufacturing factory that authorized by the Ministry of Industry and Handicraft (3) The concern of corruption in the sale staffs: To address the concern of corruption, the field Surveys will monitor and ask how much people are paying for the water filters and assess that the prices are not unreasonable. If the prices are unreasonable, PP shall investigate the reason and take appropriate action. PP believes that this risk is low because there are so many sales people that competition will keep the price low.				
Documentation provided by project participant				
☐ Changes in the PDD		Section(s):		New version No.:
☒ Changes in MR		Section(s): G.2		New version No.:
☐ Changes in XLS		Worksheet(s):		New version No.:
☐ Other:				
VVB assessment				**Date:** 15/06/2021
PD has provided three items that will continue to be monitored which are verified as relevant and VVB will check whether these mitigation measures monitored in next verification.				
Conclusion *Tick the appropriate checkbox*	☒ To be checked during the next periodic verification			

Appendix 2. Monitored Parameters

Table A-5: Periodic Verification Checklist – Monitored Parameters

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
A. SDG 1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural). Three parameter were selected to be monitored for this indicator: - The amount of fuel save, Percentage of household noted on money save and Percentage of household noted on time save after using the project technology. ***SDG 13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula. The total amount of emission reduction is the monitored parameter.***		**$T_{p,y}$ - Total distributed water purifier (CWP) units**		
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I1/ /PDD/ /MR/ /TPDDTEC/ /XLS/ /SR/ /SICWP/	*Description:* PP has recorded 33,746 total distributed water purifiers (CWP) units during this monitoring period and total 452,251 since the start of 1st crediting period; the value is obtained from Sales record/SR/ which is one of the important records from emission reduction calculation point of view. PP has established effective mechanism to capture salesdata of CWP distributed units on regular basis. This value is being updated on daily basis and compiled on monthly basis and tallied against invoices raised/SICWP/. Sales records and invoices are found auditable documents and found correct – the input to sales records are taken from three different types of sales channels i.e. Direct sales, Retail sales and NGO sales. PP has maintained daily and monthly sales and presented transparently during remote verification, the compiled data	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		province wise is also made a part of emission reduction spread sheet i.e. Sheet "Units_month"/XLS/. Verification team has verified the invoice data using sampling approach which has been stated in the C.4.2 of this report. As per the requirement from the applied methodology, for the total sales record, verifier has checked the below information, 1. The PP has maintained an accurate and complete sales record by checking the Sales record/SR/ and Sales invoices of CWP/SICWP/. 2. Via remote verification checking the computer of Project owner, it is verified that the records are backed up electronically. 3. Via checking the Sales record/SR/ and Sales invoices of CWP/SICWP/, it is verified that all the required data including date of sale, Geographic area of sale, Model/type of project technology sold, mode of use, Quantity of project technologies sold, Name, address and telephone number are all listed in the invoices for Direct sales, Retail sales and NGO sales. *Verifier´s action:* The Sales record/SR/ is checked and confirmed by cross checking the sales invoices/SICWP/ by sampling method. *Conclusion:* The measurement approach is documented as per approved 2nd Crediting Period PDD and applied methodology.		
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that*	/I1/ /PDD/ /MR/ /TPDDTEC/ /XLS/	*Description:* No monitoring equipment needed as the values of $T_{p,y}$ are derived from the invoices. *Verifier´s action:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
the most conservative assumptions theoretically possible have been made for calculating ERs. *Describe whether all applicable QA/QC procedures are met.* *Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/SR/ /SICWP/	The value is confirmed by cross checking Sales record/SR/ and sales invoices/SICWP/. *Conclusion:* Applicable QA/QC procedures are met.		
c) Correctness ***(VVS, §§ 389-393)*** *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/PDD/ /MR/ /TPDDTEC/ /XLS/ /SR/ /SICWP/	☒ Correct ☐ Not correct (initial assessment) *Description:* The value of $T_{p,y}$ during this monitoring period is reported in the MR based on the Sales record/SR/ and the value is verified as correct. *Verifier´s action:* By means of checking the Sales record/SR/ and cross checking sales invoices/SICWP/ by sampling method. *Conclusion:* The value is correct.	OK	OK
B. SDG 1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural). Three parameter were selected to be monitored for this indicator: - The amount of fuel save, Percentage of household noted on money save and Percentage of household noted on time save after using the project technology. ***SDG 6.1.1 Proportion of population using safely managed drinking water services. The number of people with access to safe drinking water is the monitored parameter.*** ***SDG 13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction***		$U_{p,y}$ **- Weighted average usage rate**		

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
and early warning into primary, secondary and tertiary curricula. The total amount of emission reduction is the monitored parameter				
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I1/ /I3/ /PDD/ /MR/ /TPDDTEC/ /XLS/ /MSR/ /GUSW/	*Description:* This is the calculated value to know what the weighted average usage rate of the CWP is during this Monitoring Period. The value applied by PP for this monitoring period is 83.18% which is obtained from the Usage Survey result in the monitoring survey report/MSR/. The Usage Survey was conducted through usage questionnaires which was designed according to the updated Gold Standard "Guidelines for carrying out usage surveys for projects implementing household water filtration technologies – 05/02/2014"/GUSW/. The related data was collected by using a computer-assisted personal interview (CAPI) developed by the World Bank recorded and analyzed in a statistic software "SPSS". This value is based on the result of usage survey conducted in December 2020 by engaging 3rd party survey agency i.e. Angkor Research/MSR/. PP has arrived at the usage rate calculation based on the Usage Survey result in the monitoring survey report/MSR/. The application of Usage rate is correct and it is based on the inputs received from 185 Households in different provinces of Cambodia. Verification team has verified the usage data using sampling approach which has been stated in the C.4.2 of this report. PP has also considered that usage rate calculation does not account the retired units i.e. units with age more than 5 years. The calculation is found correct and acceptable. The frequency of measurements as defined in the PDD is annually, this is the MP3 for CP2, started from Jan to Dec 2020. Hence, the Usage Survey was conducted in December 2020 is verified as per the requirement and is acceptable.	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		Verifier´s action: Adequate measurement arrangements are made by the PP and the data is found verified by the Programme manager which is confirmed by interview with the PP/I1/. The value is found conservative and this was verified during remote verification to various villages and sampled households/I3/. *Conclusion:* The measurement is documented as per approved 2nd Crediting Period PDD and applied methodology.		
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/PDD/ /MR/ /TPDDTEC/ /XLS/ /MSR/ /akr/	*Description:* The value is measured and calculated based on the survey carried out by a third-party (Angkor Research Consulting). No monitoring equipment needed. *Verifier´s action:* This was verified by means of checking the Angkor Research information/akr/. *Conclusion:* QA/QC procedures are met. No inaccuracies occurred.	OK	OK
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/PDD/ /MR/ /TPDDTEC/ /XLS/ /MSR/	☐ Correct ☒ Not correct (initial assessment) *Description:* The value given in the MR is derived from the Usage Survey result in the monitoring survey report/MSR/. *Verifier´s action:* It was verified by cross checking the ER calculation sheet against the Usage Survey result in the monitoring survey report/MSR/. *Conclusion:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		The value is correct.		
C. SDG 3.9.1 Mortality rate attributed to household and ambient air pollution. The number of people who notice less smoke in kitchen after having water filter is the monitored parameter. ***SDG 6.1.1 Proportion of population using safely managed drinking water services. The number of people with access to safe drinking water is the monitored parameter.*** ***SDG 13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula. The total amount of emission reduction is the monitored parameter***		***$WQ_{Passed,y}$* - Water quality passing rate of water quality standard (WHO standard) per year**		
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I1/ /I3/ /PDD/ /MR/ /TPDDTEC/ /XLS/ /WQTP/ /WQTR/ /WQTS/ /WQS/ /ipc/	*Description:* Third party Laboratory Analysis reports are provided to prove that the water treated through the CWP is bacteria free and the CWP's are working as required for supplying potable quality water consistently and the water quality meets relevant Standard. PP has performed Water analysis taking samples from various households and sending these samples to the third party laboratory Institut Pasteur du Cambodge quarterly. The certificate of this lab is verified by cheking the officical website/ipc/. PP has established a specific Protocol/WQTP/ for "Water Quality Test Survey" in order to provide clear guidance on Sampling approach, Water Sample collection and storage method and results of the Tests performed and conclusions taken. Via checking the Water quality test report/WQTR/ against the protocol, it is confirmed that the measurement is conducted as per the GS update rule "the Requirement for Quality Standard to be met by safe water supply projects submitted Prior to 31st January 2014"/WQS/.	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		PP has compared the results of analysis/WQTR/ with WHO water quality standard and concluded that 90% samples are meeting the water quality standard prescribed by the WHO. This is shown transparently in the document of HSE_CP2-MP3_WQ_protocol/WQTP/ and verified by the verification team. *Verifier´s action:* The outcome of the analysis is found documented clearly in the document summary - HSE_CP2-MP3_Water_Quality_Result/WQTS/, and corresponding 3rd party laboratory Analysis reports/WQTR/ are also made available for remote verification . Verifier has assessed these documents and confirmed that the results are well within the prescribed norms for all those water samples from households are passed. *Conclusion:* The measurement is documented as per approved 2nd Crediting Period PDD and applied methodology.		
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I3/ /PDD/ /MR/ /TPDDTEC/ /ipc/	*Description:* The water quality surveys were conducted on quarterly base: March 2020, June 2020, Sep 2020 and Dec 2020. No monitoring equipment needed as the analysis is completed in a third-party laboratory. The certificate of this lab is verified by cheking the officical website/ipc/. *Verifier´s action:* This was verified by means of checking the lab certificate/ipc/. *Conclusion:* QA/QC procedures are met. No inaccuracies occurred.	OK	OK
c) Correctness (VVS, §§ 389-393)	/MR/ /XLS/	☒ Correct ☐ Not correct (initial assessment) *Description:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Determine whether the value given in the monitoring report is correct or determined in a conservative manner. *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/WQTP/ /WQTR/ /WQTS/ /WQS/	The $WQ_{Passed,y}$ during this monitoring period is reported in the MR based on the document summary - HSE_CP2-MP3_Water_Quality_Result/WQTS/, and corresponding 3rd party laboratory Analysis reports/WQTR/. *Verifier´s action:* By means of checking the ER-spreadsheet/XLS/ against the document summary - HSE_CP2-MP3_Water_Quality_Result/WQTS/, and corresponding 3rd party laboratory Analysis reports/WQTR/. *Conclusion:* The value is calculated as correct.		
D. SDG 3.9.1 Mortality rate attributed to household and ambient air pollution. The number of people who notice less smoke in kitchen after having water filter is the monitored parameter. ***SDG 6.1.1 Proportion of population using safely managed drinking water services. The number of people with access to safe drinking water is the monitored parameter.*** ***SDG 13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula. The total amount of emission reduction is the monitored parameter***		**Hygiene Campaigns -Number of people attends the meeting in which Hygiene issue were explained**		
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).*	/I1/ /I3/ /PDD/ /MR/ /TPDDTEC/	*Description:* PP conducted general hygiene campaign by attaching it to the sale meeting. PP also conducted hygiene survey in addition to project and usage survey. Via checking the Hygiene Champaign Attendant list 2020/HCAL/, it is verified that 113,246 people joined the hygiene campaign in this MP and the hygiene survey was confirmed as conducted together with project and usage survey	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/HCAL/ /MSR/	which is verified by checking the monitoring survey report/MSR/, it showed that all the rspondents have the awareness that handwashing before eating/drinking is somewhat or very important and the results is confirmed reasonable and credible. *Verifier´s action:* The verifier checked all the List of Participants in the meetings/HCAL/ in 2020 to veriry the number of people is correct. *Conclusion:* The measurement approach is documented as per approved 2nd Crediting Period PDD and applied methodology.		
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met.* *Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I3/ /PDD/ /MR/ /TPDDTEC/ /HCAL/	*Description:* No monitoring equipment needed as the Number of people attends the meetings are derived from the attendance lists. *Verifier´s action:* The value is confirmed by cross checking list of attendance/HCAL/. *Conclusion:* Applicable QA/QC procedures are met.	OK	OK
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/PDD/ /MR/ /TPDDTEC/ /HCAL/	☒ Correct ☐ Not correct (initial assessment) *Description:* The value of Number of people attends the meetings during this monitoring period is reported in the MR based on list of attendance/HCAL/, and the value is verified as correct. *Verifier´s action:* By means of checking the list of attendance/HCAL/. *Conclusion:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		The value is correct.		
E. ***SDG 3.9.1 Mortality rate attributed to household and ambient air pollution. The number of people who notice less smoke in kitchen after having water filter is the monitored parameter.*** ***SDG 6.1.1 Proportion of population using safely managed drinking water services. The number of people with access to safe drinking water is the monitored parameter.*** ***SDG 13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula. The total amount of emission reduction is the monitored parameter***		$N_{p,y}$ **- Number of person.days consuming water supplied by project scenario p through year y**		
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I1/ /I3/ /PDD/ /MR/ /TPDDTEC/ /XLS/ /MSR/	*Description:* This is a calculated value based on the Water Consumption Field Test (WCFT) survey done in December 2020 by Angkor Research. The value applied by the PP is 1,914.18 persons who are consuming Water supplied by the CWP's. This value is derived from the WCFT Survey result in the Monitoring Survey Report/MSR/. This value is calculated using number of days in use (366) * number of units per household (1) * number of persons per household (5.23) and it is found applied correctly. PP obtains the main input from the WCFT Survey in the Monitoring Survey Report/MSR/. The value of persons on average consuming water from one CWP is 5.23 by checking the Monitoring Survey Report/MSR/. Based on the review of survey forms during this survey it is confirmed that the value calculated based on transparent data. *Verifier´s action:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		This value is derived from the WCFT Survey result in the Monitoring Survey Report/MSR/ which was monitored in December 2020. Also this was verified during remote verification to households, by interview with the 50 households, it is found that average persons per house hold are found to be 5 persons, thus the values used is considered as conservative. *Conclusion:* The measurement is documented as per approved 2nd Crediting Period PDD and applied methodology.		
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I3/ /PDD/ /MR/ /TPDDTEC/ /XLS/ /MSR/ /RD/	*Description:* No monitoring equipment needed as the analysis is completed in a third-party report and conducted by questionnaires. *Verifier´s action:* The value is confirmed by cross checking the raw data/RD/ and results of the Water Consumption Field Test which was listed in the Monitoring Survey Report/MSR/. *Conclusion:* Applicable QA/QC procedures are met.	~~OK~~	OK
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/PDD/ /MR/ /TPDDTEC/ /XLS/ /MSR/ /RD/	☐ Correct ☒ Not correct (initial assessment) *Description:* The value of $N_{p,y}$ during this monitoring period is reported in the MR based on the WCFT Survey result in the Monitoring Survey Report/MSR/. *Verifier´s action:*	~~CAR 04~~	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		By means of checking the ER-spreadsheet/XLS/ against the Monitoring Survey Report/MSR/ confirmed by third party Angkor Research. *Conclusion:* The value is not correct. CAR 04 was raised.		
F. ***SDG 1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural). Three parameter were selected to be monitored for this indicator: - The amount of fuel save, Percentage of household noted on money save and Percentage of household noted on time save after using the project technology.*** ***SDG 13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula. The total amount of emission reduction is the monitored parameter.*** ***SDG 15.1.1 Forest area as a proportion of total land area. Area of forest save is the monitored parameter.***		**$Q_{p,y}$ - Quantity of purified water consumed in the project scenario p per person per day (Litres/person/day)**		
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used.*	/I1/ /I3/ /PDD/ /MR/ /TPDDTEC/ /XLS/ /MSR/ /SNC/	*Description:* PP has applied 1.19 Liters per day per person for this monitoring period. This value is obtained from the Water Consumption Field Test listed in the Monitoring Survey Report/MSR/, which was conducted in December 2020 by Angkor Research. The information of this party is confirmed by checking their official website/akr/.	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Furthermore, verify the frequency of measurements as per the requirements. *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/WCFTP/	The value applied is found statistically correct. PP has ensured that adequate QA/QC measures are implemented and the data is verified, entered and analyzed independently. PP has established a comprehensive Sampling approach "HSE_CP2MP3_WCFT_Protocol_EN_FINAL"/WCFTP/ based on the approved Gold standard procedure for Sampling. Statistical calculations are found addressing all points and found that random sampling is followed. Via verifying the applied methodology, it is confirmed that the project WCFT should be done prior to the first verification and every two year for the sequential monitoring period, hence for this MP3CP2, the survey was conducted in December 2020 is confirmed as in line with the requirement (MP1CP2 conducted in January 2019). *Verifier´s action:* The value is confirmed by cross checking the Sampling protocol/WCFTP/, Sample number Calculation Spreadsheets/SNC/ and the results of the Water Consumption Field Test which was listed in the Monitoring Survey Report/MSR/. *Conclusion:* The measurement is documented as per approved 2nd Crediting Period PDD and applied methodology.		
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.*	/I1/ /I3/ /PDD/ /MR/ /TPDDTEC/ /XLS/ /MSR/ /SNC/	*Description:* This value is obtained from the Water Consumption Field Test which was listed in the Monitoring Survey Report/MSR/, which was conducted during December 2020 by a third-party consulting company (Angkor Research). For determine the value of $Q_{p,y}$ in monitoring survey, the following monitoring equipment of Scales are used.	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance. *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/WCFTP/ /CAL/ /MF/	The calibration frequency is every time a new set of water consumption field tests has to be performed and the scales should be verified by checking the reading for a standard weight at an accuracy of +/- 2 grams. As per the monitoring plan defined in the PDD, PP has established "ARC_Hydrologic Calibration&Inventory_2020_EN" for equipment calibration requirements. As per the Inventory, PP has conducted calibrated equipment's to perform the Water Consumption Field Test. The "ARC_Hydrologic Calibration&Inventory_2020_EN"/CAL/ has been verified by the verifier, and is confirmed that all the equipment's are calibrated and still valid during used. QA/QC procedure for data collected during the tests is that the filed result of four-day period are recorded on paper forms. Following the encoding process, the analysis was led by experienced consultant and the final results was then validated by the Carbon Project Manager at Nexus. This has been verified by checking the "HSE_CP2MP3_ Monitoring_Flow"/MF/. *Verifier´s action:* The above mentioned was verified by cross checking the "ARC_Hydrologic Calibration&Inventory_2020_EN"/CAL/, "HSE_CP2MP3_ Monitoring_Flow"/MF/ agaist the Monitoring Survey Report/MSR/. *Conclusion:* The accuracy of equipment used for monitoring is checked as controlled and calibrated in accordance with the monitoring plan.		
c) Correctness (VVS, §§ 389-393)	/MR/ /XLS/ /MSR/	☒ Correct ☐ Not correct (initial assessment) *Description:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Determine whether the value given in the monitoring report is correct or determined in a conservative manner. *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/SNC/ /WCFTP/ /CAL/ /MF/	The Quantity of safe water supplied in the project scenario p of $Q_{p,y}$ during this monitoring period is reported in the MR based on the Water Consumption Field Test result in the Monitoring Survey Report/MSR/. *Verifier´s action:* By means of checking the ER-spreadsheet/XLS/ against the Monitoring Survey Report/MSR/ confirmed by third party Angkor Research. *Conclusion:* The value is correct.		
G. SDG 1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural). Three parameter were selected to be monitored for this indicator: - The amount of fuel save, Percentage of household noted on money save and Percentage of household noted on time save after using the project technology. ***SDG 13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula. The total amount of emission reduction is the monitored parameter.*** ***SDG 15.1.1 Forest area as a proportion of total land area. Area of forest save is the monitored parameter.***		**$Q_{p,rawboil,\ y}$ - The raw or unsafe water that is still boiled after installation of the CWP (Litres/person/day)**		
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also*	/I1/ /I3/ /PDD/ /MR/	*Description:* PP has applied 0.55 Liters per day per person for this monitoring period. This value is obtained from the Water Consumption Field Test listed in the Monitoring Survey Report/MSR/, which was conducted in December 2020 by Angkor Research.	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
describe the applied data aggregation trails (from ODL to data aggregation level zero). *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/TPDDTEC/ /XLS/ /MSR/ /SNC/ /WCFTP/	The information of this party is confirmed by checking their official website/akr/. The value applied is found statistically correct. PP has ensured that adequate QA/QC measures are implemented and the data is verified, entered and analyzed independently. PP has established a comprehensive Sampling approach "HSE_CP2MP3_WCFT_Protocol_EN_FINAL"/WCFTP/ based on the approved Gold standard procedure for Sampling. Statistical calculations are found addressing all points and found that random sampling is followed. Via verifying the applied methodology, it is confirmed that the project WCFT should be done prior to the first verification and every two year for the sequential monitoring period, hence for this MP3CP2, the survey was conducted in December 2020 is confirmed as in line with the requirement (MP1CP2 conducted in January 2019). *Verifier´s action:* The value is confirmed by cross checking the Sampling protocol/WCFTP/, Sample number Calculation Spreadsheets/SNC/ and the results of the Water Consumption Field Test which was listed in the Monitoring Survey Report/MSR/. *Conclusion:* The measurement is documented as per approved 2nd Crediting Period PDD and applied methodology.		
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that*	/I1/ /I3/ /PDD/ /MR/ /TPDDTEC/	*Description:* This value is obtained from the Water Consumption Field Test which was listed in the Monitoring Survey Report/MSR/, which was conducted during December 2020 by a third-party consulting company (Angkor Research).	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
the most conservative assumptions theoretically possible have been made for calculating ERs. *Describe whether all applicable QA/QC procedures are met.* *Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/XLS/ /MSR/ /SNC/ /WCFTP/ /CAL/ /MF/	For determine the value of $Q_{p,rawboil,y}$ in monitoring survey, the following monitoring equipment of Scales are used. The calibration frequency is every time a new set of water consumption field tests has to be performed and the scales should be verified by checking the reading for a standard weight at an accuracy of +/- 2 grams. As per the monitoring plan defined in the PDD, PP has established "ARC_Hydrologic Calibration&Inventory_2020_EN" for equipment calibration requirements. As per the Inventory, PP has conducted calibrated equipment's to perform the Water Consumption Field Test. The "ARC_Hydrologic Calibration&Inventory_2020_EN"/CAL/ has been verified by the verifier, and is confirmed that all the equipment's are calibrated and still valid during used. QA/QC procedure for data collected during the tests is that the filed result of four-day period are recorded on paper forms. Following the encoding process, the analysis was led by experienced consultant and the final results was then validated by the Carbon Project Manager at Nexus. This has been verified by checking the "HSE_CP2MP3_ Monitoring_Flow"/MF/. *Verifier´s action:* The above mentioned was verified by cross checking the "ARC_Hydrologic Calibration&Inventory_2020_EN"/CAL/, "HSE_CP2MP3_ Monitoring_Flow"/MF/ agaist the Monitoring Survey Report/MSR/. *Conclusion:* The accuracy of equipment used for monitoring is checked as controlled and calibrated in accordance with the monitoring plan.		
c) Correctness	/MR/	☒ Correct ☐ Not correct (initial assessment)	~~CL 02~~	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
(VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/XLS/ /MSR/ /SNC/ /WCFTP/ /CAL/ /MF/	*Description:* The raw or unsafe water that is still boiled after installation of the CWP in the project scenario p of $Q_{p,rawboil,y}$ during this monitoring period is reported in the MR based on the Water Consumption Field Test result in the Monitoring Survey Report/MSR/. Via checking the Monitoring Survey Report/MSR/, it is confirmed that the value of upper limit is applied instead of using the mean value, due to the margin of error (18.97%) is greater than that of the tolerated value (10%) based on TPDDTEC 3.0, footnote 63, page 46. *Verifier´s action:* By means of checking the ER-spreadsheet/XLS/ against the Monitoring Survey Report/MSR/ confirmed by third party Angkor Research. *Conclusion:* The value is correct. However, the actual margin of error is not specified, clarification is requested. CL 02 was raised.		
H. ***SDG 1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural). Three parameter were selected to be monitored for this indicator: - The amount of fuel save, Percentage of household noted on money save and Percentage of household noted on time save after using the project technology.*** ***SDG 13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula. The total amount of emission reduction is the monitored parameter.***		**$Q_{P,cleanboil,y}$ - Quantity of safe water (treated or from safe supply) boiled in the project scenario p, after installation of the CWP (Litres/person/day)**		

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
SDG 15.1.1 Forest area as a proportion of total land area. Area of forest save is the monitored parameter.				
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I1/ /I3/ /PDD/ /MR/ /TPDDTEC/ /XLS/ /MSR/ /SNC/ /WCFTP/	*Description:* PP has applied 0.03a Liters per day per person for this monitoring period. This value is obtained from the Water Consumption Field Test listed in the Monitoring Survey Report/MSR/, which was conducted in December 2020 by Angkor Research. The information of this party is confirmed by checking their official website/akr/. The value applied is found statistically correct. PP has ensured that adequate QA/QC measures are implemented and the data is verified, entered and analyzed independently. PP has established a comprehensive Sampling approach "HSE_CP2MP3_WCFT_Protocol_EN_FINAL"/WCFTP/ based on the approved Gold standard procedure for Sampling. Statistical calculations are found addressing all points and found that random sampling is followed. Via verifying the applied methodology, it is confirmed that the project WCFT should be done prior to the first verification and every two year for the sequential monitoring period, hence for this MP3CP2, the survey was conducted in December 2020 is confirmed as in line with the requirement (MP1CP2 conducted in January 2019). *Verifier´s action:* The value is confirmed by cross checking the Sampling protocol/WCFTP/, Sample number Calculation Spreadsheets/SNC/ and the results of the Water Consumption Field Test which was listed in the Monitoring Survey Report/MSR/. *Conclusion:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		The measurement is documented as per approved 2nd Crediting Period PDD and applied methodology.		
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met.* *Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I3/ /PDD/ /MR/ /TPDDTEC/ /XLS/ /MSR/ /SNC/ /WCFTP/ /CAL/ /MF/	*Description:* This value is obtained from the Water Consumption Field Test which was listed in the Monitoring Survey Report/MSR/, which was conducted during December 2020 by a third-party consulting company (Angkor Research). For determine the value of $Q_{p,cleanboil,y}$ in monitoring survey, the following monitoring equipment of Scales are used. The calibration frequency is every time a new set of water consumption field tests has to be performed and the scales should be verified by checking the reading for a standard weight at an accuracy of +/- 2 grams. As per the monitoring plan defined in the PDD, PP has established "ARC_Hydrologic Calibration&Inventory_2020_EN" for equipment calibration requirements. As per the Inventory, PP has conducted calibrated equipment's to perform the Water Consumption Field Test. The "ARC_Hydrologic Calibration&Inventory_2020_EN"/CAL/ has been verified by the verifier, and is confirmed that all the equipment's are calibrated and still valid during used. QA/QC procedure for data collected during the tests is that the filed result of four-day period are recorded on paper forms. Following the encoding process, the analysis was led by experienced consultant and the final results was then validated by the Carbon Project Manager at Nexus. This has been verified by checking the "HSE_CP2MP3_ Monitoring_Flow"/MF/. *Verifier´s action:* The above mentioned was verified by cross checking the "ARC_Hydrologic Calibration&Inventory_2020_EN"/CAL/,	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		"HSE_CP2MP3_ Monitoring_Flow"/MF/ agaist the Monitoring Survey Report/MSR/. *Conclusion:* The accuracy of equipment used for monitoring is checked as controlled and calibrated in accordance with the monitoring plan.		
c) Correctness ***(VVS, §§ 389-393)*** *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/MR/ /XLS/ /MSR/ /SNC/ /WCFTP/ /CAL/ /MF/	☒ Correct ☐ Not correct (initial assessment) *Description:* The quantity of safe water (treated or from safe supply) boiled in the project scenario p of $Q_{p,cleanboil,y}$ during this monitoring period is reported in the MR based on the Water Consumption Field Test result in the Monitoring Survey Report/MSR/. Via checking the Monitoring Survey Report/MSR/, it is confirmed that the value of upper limit is applied instead of using the mean value, due to the margin of error (72.25%) is greater than that of the tolerated value (10%) based on TPDDTEC 3.0, footnote 63, page 46. *Verifier´s action:* By means of checking the ER-spreadsheet/XLS/ against the Monitoring Survey Report/MSR/ confirmed by third party Angkor Research. *Conclusion:* The value is correct. However, the actual margin of error is not specified, clarification is requested. CL 03 was raised.	~~CL 03~~	OK
I. SDG 5.4.1 Proportion of time spent on unpaid domestic and care work, by sex, age and location. The number of women and girls benefiting from stop/reducing boiling water and collecting/purchasing cooking fuel is the monitored parameter.		**Women%_HH - Average percentage of women and girls per household who use CWP**		

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I1/ /I3/ /MR/ /TPDDTEC/ /XLS/ /TA/ /MSR/ /QUE/	*Description:* PP asked third party to conducted monitoring survey to investigate the average percentage of women and girls per household who use CWP by ask the household to fill related questionnaires. Via checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/, it showed that **56.25%** women and girls per household use CWP during this monitoring period and the results is confirmed reasonable and credible. *Verifier´s action:* The verifier checked the monitoring survey report/MSR/ to veriry the percentage is correct. *Conclusion:* The measurement approach is documented as per transition annex and applied methodology.	OK	OK
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I3/ /MR/ /TPDDTEC/ /XLS/ /TA/ /MSR/ /QUE/	*Description:* No monitoring equipment needed as the percentage of using is derived from the monitoring survey report/MSR/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/. *Conclusion:* Applicable QA/QC procedures are met.	OK	OK
c) Correctness (VVS, §§ 389-393)	/MR/ /XLS/ /MSR/	☒ Correct ☐ Not correct (initial assessment) *Description:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Determine whether the value given in the monitoring report is correct or determined in a conservative manner. *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/QUE/	The value of average percentage of women and girls per household who use CWP is reported in the MR based on monitoring survey report/MSR/, and the value is verified as correct. *Verifier´s action:* By means of checking monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/. *Conclusion:* The value is correct.		
J. SGD 5.4.1 Proportion of time spent on unpaid domestic and care work, by sex, age and location. The number of women and girls benefiting from stop/reducing boiling water and collecting/purchasing cooking fuel is the monitored parameter.		***Women%* - Average percentage of women and girls responsible for water boiling and collecting/purchasing cooking fuel before having CWFs**		
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I1/ /I3/ /MR/ /TPDDTEC/ /XLS/ /TA/ /MSR/ /QUE/	*Description:* PP asked third party to conducted monitoring survey to investigate the average percentage of women and girls responsible for water boiling and collecting/purchasing cooking fuel before having CWPs by ask the household to fill related questionnaires. Via checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/, it showed that **81.65%** women and girls responsible for water boiling and collecting/purchasing cooking fuel before having CWPs and the results is confirmed reasonable and credible. *Verifier´s action:* The verifier checked the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/ to veriry the percentage is correct. *Conclusion:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		The measurement approach is documented as per transition annex and applied methodology.		
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met.* *Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I3/ /MR/ /TPDDTEC/ /XLS/ /TA/ /MSR/ /QUE/	*Description:* No monitoring equipment needed as the percentage of using is derived from the monitoring survey report/MSR/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/. *Conclusion:* Applicable QA/QC procedures are met.	OK	OK
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/MR/ /XLS/ /MSR/ /QUE/	☒ Correct ☐ Not correct (initial assessment) *Description:* The value of average percentage of women and girls per household who use CWP is reported in the MR based on monitoring survey report/MSR/, and the value is verified as correct. *Verifier´s action:* By means of checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/. *Conclusion:* The value is correct.	OK	OK
K. SDG 3.9.1 Mortality rate attributed to household and ambient air pollution. The number of people who notice less smoke in kitchen after having water filter is the monitored parameter		***$N_{Less\_smoke,y}$* - % of households notice that their kitchen is less smoke**		
a) Measurement / Determination method (VVS, §§ 389-393)	/I1/ /I3/	*Description:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero). *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/MR/ /TPDDTEC/ /XLS/ /TA/ /MSR/ /QUE/	PP asked third party to conducted monitoring survey to investigate the percentage of households notice that their kitchen is less smoke by ask the household to fill related questionnaires. Via checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/, it showed that 75.9% of households notice that their kitchen is less smoke and the results is confirmed reasonable and credible. *Verifier´s action:* The verifier checked the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/ to veriry the percentage is correct. *Conclusion:* The measurement approach is documented as per transition annex and applied methodology.		
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I3/ /MR/ /TPDDTEC/ /XLS/ /TA/ /MSR/ /QUE/	*Description:* No monitoring equipment needed as the percentage of households is derived from the monitoring survey report/MSR/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/. *Conclusion:* Applicable QA/QC procedures are met.	OK	OK
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.*	/MR/ /XLS/ /MSR/ /QUE/	☒ Correct ☐ Not correct (initial assessment) *Description:* The value of percentage of households notice that their kitchen is less smoke is reported in the MR based on monitoring survey report/MSR/, and the value is verified as correct.	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given. *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*		*Verifier´s action:* By means of checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/. *Conclusion:* The value is correct.		
L. SDG1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural). Three parameters were selected to be monitored for this indicator: - The amount of fuel save, Percentage of household noted on money save and Percentage of household noted on time save after using the project technology. ***SDG13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula. The total amount of emission reduction is the monitored parameter.*** ***SDG15.1.1 Forest area as a proportion of total land area. Area of forest save is the monitored parameter.***		***% of Traditional Stove Users with wood in the project scenario* - Percentage of Traditional Stove Users with wood in the project scenario**		
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.*	/I1/ /I3/ /MR/ /TPDDTEC/ /XLS/ /TA/ /MSR/ /QUE/	*Description:* PP asked third party to conducte monitoring survey to investigate the percentage of Traditional Stove Users with wood in the project scenario by ask the household to fill related questionnaires. Via checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/, it showed that 44.10% of households use traditional stove with wood and the results is confirmed reasonable and credible. *Verifier´s action:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.		The verifier checked the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/ to veriry the percentage is correct. *Conclusion:* The measurement approach is documented as per transition annex and applied methodology.		
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met.* *Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I3/ /MR/ /TPDDTEC/ /XLS/ /TA/ /MSR/ /QUE/	*Description:* No monitoring equipment needed as the percentage of Traditional Stove Users with wood in the project scenario is derived from the monitoring survey report/MSR/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/. *Conclusion:* Applicable QA/QC procedures are met.	OK	OK
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/MR/ /XLS/ /MSR/ /QUE/	☒ Correct ☐ Not correct (initial assessment) *Description:* The value of percentage of Traditional Stove Users with wood in the project scenario is reported in the MR based on monitoring survey report/MSR/, and the value is verified as correct. *Verifier´s action:* By means of checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/. *Conclusion:* The value is correct.	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
M. ***SDG1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural). Three parameters were selected to be monitored for this indicator: - The amount of fuel save, Percentage of household noted on money save and Percentage of household noted on time save after using the project technology.*** ***SDG13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula. The total amount of emission reduction is the monitored parameter.*** ***SDG15.1.1 Forest area as a proportion of total land area. Area of forest save is the monitored parameter.***		**% of Improved Stove Users with wood in the project scenario - Percentage of Improved Stove Users with wood in the project scenario**		
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I1/ /I3/ /MR/ /TPDDTEC/ /XLS/ /TA/ /MSR/ /QUE/	*Description:* PP asked third party to conducted monitoring survey to investigate the percentage of Improved Stove Users with wood in the project scenario by ask the household to fill related questionnaires. Via checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/, it showed that 13.10% of households use Improved stove with wood and the results is confirmed reasonable and credible. *Verifier´s action:* The verifier checked the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/ to veriry the percentage is correct. *Conclusion:* The measurement approach is documented as per transition annex and applied methodology.	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I3/ /MR/ /TPDDTEC/ /XLS/ /TA/ /MSR/ /QUE/	*Description:* No monitoring equipment needed as the percentage of Improved Stove Users with wood in the project scenario is derived from the monitoring survey report/MSR/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/. *Conclusion:* Applicable QA/QC procedures are met.	OK	OK
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/MR/ /XLS/ /MSR/ /QUE/	☒ Correct ☐ Not correct (initial assessment) *Description:* The value of percentage of Improved Stove Users with wood in the project scenario is reported in the MR based on monitoring survey report/MSR/, and the value is verified as correct. *Verifier´s action:* By means of checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/. *Conclusion:* The value is correct.	OK	OK
N. SDG1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural). Three parameters were selected to be monitored for this indicator: - The amount of fuel save, Percentage of household noted on money save and Percentage of household noted on time save after using the project technology.		***% of Traditional Stove Users with charcoal in the project scenario* - Percentage of Traditional Stove Users with charcoal in the project scenario**		

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
SDG13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula. The total amount of emission reduction is the monitored parameter. ***SDG15.1.1 Forest area as a proportion of total land area. Area of forest save is the monitored parameter.***				
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I1/ /I3/ /MR/ /TPDDTEC/ /XLS/ /TA/ /MSR/ /QUE/	*Description:* PP asked third party to conducted monitoring survey to investigate the percentage of Traditional Stove Users with charcoal in the project scenario by ask the household to fill related questionnaires. Via checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/, it showed that none of households use traditional stove with charcoal and the results is confirmed reasonable and credible. *Verifier´s action:* The verifier checked the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/ to veriry the percentage is correct. *Conclusion:* The measurement approach is documented as per transition annex and applied methodology.	OK	OK
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.*	/I1/ /I3/ /MR/ /TPDDTEC/ /XLS/ /TA/	*Description:* No monitoring equipment needed as the percentage of Traditional Stove Users with charcoal in the project scenario is derived from the monitoring survey report/MSR/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/.	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance. Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.	/MSR/ /QUE/	*Conclusion:* Applicable QA/QC procedures are met.		
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner. In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given. In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/MR/ /XLS/ /MSR/ /QUE/	☒ Correct ☐ Not correct (initial assessment) *Description:* The value of percentage of Traditional Stove Users with charcoal in the project scenario is reported in the MR based on monitoring survey report/MSR/, and the value is verified as correct. *Verifier´s action:* By means of checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/. *Conclusion:* The value is correct.	OK	OK
O. SDG1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural). Three parameters were selected to be monitored for this indicator: - The amount of fuel save, Percentage of household noted on money save and Percentage of household noted on time save after using the project technology. ***SDG13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula. The total amount of emission reduction is the monitored parameter.*** ***SDG15.1.1 Forest area as a proportion of total land area. Area of forest save is the monitored parameter.***		***% of Improved Stove Users with charcoal in the project scenario* - Percentage of Improved Stove Users with charcoal in the project scenario**		

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I1/ /I3/ /MR/ /TPDDTEC/ /XLS/ /TA/ /MSR/ /QUE/	*Description:* PP asked third party to conducted monitoring survey to investigate the percentage of Improved Stove Users with charcoal in the project scenario by ask the household to fill related questionnaires. Via checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/, it showed that 1.20% of households use Improved stove with charcoal and the results is confirmed reasonable and credible. *Verifier´s action:* The verifier checked the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/ to veriry the percentage is correct. *Conclusion:* The measurement approach is documented as per transition annex and applied methodology.	OK	OK
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met.* *Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I3/ /MR/ /TPDDTEC/ /XLS/ /TA/ /MSR/ /QUE/	*Description:* No monitoring equipment needed as the percentage of Improved Stove Users with charcoal in the project scenario is derived from the monitoring survey report/MSR/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/. *Conclusion:* Applicable QA/QC procedures are met.	OK	OK
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.*	/MR/ /XLS/ /MSR/	☒ Correct ☐ Not correct (initial assessment) *Description:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given. *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/QUE/	The value of percentage of Improved Stove Users with charcoal in the project scenario is reported in the MR based on monitoring survey report/MSR/, and the value is verified as correct. *Verifier´s action:* By means of checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/. *Conclusion:* The value is correct.		
P. SDG1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural). Three parameters were selected to be monitored for this indicator: - The amount of fuel save, Percentage of household noted on money save and Percentage of household noted on time save after using the project technology. ***SDG13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula. The total amount of emission reduction is the monitored parameter.*** ***SDG15.1.1 Forest area as a proportion of total land area. Area of forest save is the monitored parameter.***		***% of LPG stove usage in the project scenario* - Percentage of LPG stove usage in the project scenario**		
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other*	/I1/ /I3/ /MR/ /TPDDTEC/ /XLS/ /TA/	*Description:* PP asked third party to conducted monitoring survey to investigate the percentage of LPG stove usage in the project scenario by ask the household to fill related questionnaires. Via checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/, it showed that 26.2% of households use LPG stove and the results is confirmed reasonable and credible.	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/MSR/ /QUE/	*Verifier´s action:* The verifier checked the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/ to veriry the percentage is correct. *Conclusion:* The measurement approach is documented as per transition annex and applied methodology.		
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met.* *Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I3/ /MR/ /TPDDTEC/ /XLS/ /TA/ /MSR/ /QUE/	*Description:* No monitoring equipment needed as the percentage of LPG stove usage in the project scenario is derived from the monitoring survey report/MSR/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/. *Conclusion:* Applicable QA/QC procedures are met.	OK	OK
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/MR/ /XLS/ /MSR/ /QUE/	☒ Correct ☐ Not correct (initial assessment) *Description:* The value of percentage of LPG stove usage in the project scenario is reported in the MR based on monitoring survey report/MSR/, and the value is verified as correct. *Verifier´s action:* By means of checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/. *Conclusion:* The value is correct.	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Q. ***SDG1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural). Three parameters were selected to be monitored for this indicator: - The amount of fuel save, Percentage of household noted on money save and Percentage of household noted on time save after using the project technology.*** ***SDG13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula. The total amount of emission reduction is the monitored parameter.*** ***SDG15.1.1 Forest area as a proportion of total land area. Area of forest save is the monitored parameter.***		***% of Small LPG stove usage in the project scenario* - Percentage of Small LPG stove usage in the project scenario**		
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I1/ /I3/ /MR/ /TPDDTEC/ /XLS/ /TA/ /MSR/ /QUE/	*Description:* PP asked third party to conducted monitoring survey to investigate the percentage of Small LPG stove usage in the project scenario by ask the household to fill related questionnaires. Via checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/, it showed that 9.10% of households use Small LPG stove and the results is confirmed reasonable and credible. *Verifier´s action:* The verifier checked the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/ to veriry the percentage is correct. *Conclusion:* The measurement approach is documented as per transition annex and applied methodology.	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met.* *Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I3/ /MR/ /TPDDTEC/ /XLS/ /TA/ /MSR/ /QUE/	*Description:* No monitoring equipment needed as the percentage of Small LPG stove usage in the project scenario is derived from the monitoring survey report/MSR/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/. *Conclusion:* Applicable QA/QC procedures are met.	OK	OK
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/MR/ /XLS/ /MSR/ /QUE/	☒ Correct ☐ Not correct (initial assessment) *Description:* The value of percentage of Small LPG stove usage in the project scenario is reported in the MR based on monitoring survey report/MSR/, and the value is verified as correct. *Verifier´s action:* By means of checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/. *Conclusion:* The value is correct.	OK	OK
R. SDG1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural). Three parameters were selected to be monitored for this indicator: - The amount of fuel save, Percentage of household noted on money save and Percentage of household noted on time save after using the project technology.		**% of Large LPG stove usage in the project scenario - Percentage of Large LPG stove usage in the project scenario**		

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
SDG13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula. The total amount of emission reduction is the monitored parameter. ***SDG15.1.1 Forest area as a proportion of total land area. Area of forest save is the monitored parameter.***				
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I1/ /I3/ /MR/ /TPDDTEC/ /XLS/ /TA/ /MSR/ /QUE/	*Description:* PP asked third party to conducted monitoring survey to investigate the percentage of Large LPG stove usage in the project scenario by ask the household to fill related questionnaires. Via checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/, it showed that 90.90% of households use Large LPG stove and the results is confirmed reasonable and credible. *Verifier´s action:* The verifier checked the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/ to veriry the percentage is correct. *Conclusion:* The measurement approach is documented as per transition annex and applied methodology.	OK	OK
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.*	/I1/ /I3/ /MR/ /TPDDTEC/ /XLS/ /TA/ /MSR/	*Description:* No monitoring equipment needed as the percentage of Large LPG stove usage in the project scenario is derived from the monitoring survey report/MSR/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/.	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance. Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.	/QUE/	*Conclusion:* Applicable QA/QC procedures are met.		
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner. In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given. In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/MR/ /XLS/ /MSR/ /QUE/	☒ Correct ☐ Not correct (initial assessment) *Description:* The value of percentage of Large LPG stove usage in the project scenario is reported in the MR based on monitoring survey report/MSR/, and the value is verified as correct. *Verifier´s action:* By means of checking the monitoring survey report/MSR/ comparing with the filled questionnaires/QUE/. *Conclusion:* The value is correct.	OK	OK
S. SDG13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula. The total amount of emission reduction is the monitored parameter.		***$LE_{p,y}$* - Leakage emissions for project scenario p during year y**		
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.*	/I1/ /I2/ /PDD/ /MR/ /TPDDTEC/ /XLS/ /WDP/ /WPI/ /DGPI/	*Description:* This value represents the leakage due to project activity. PP has applied value of 0.012 tCO_2e per water filter per year. This is a calculated value and the important inputs to arrive at this factor is consumption of Wood in Factory for firing of Pots (Baking Process). PP has used Specific formula provided in the approved 2nd Crediting Period PDD. The Application of Formula found correct and the input values are taken from Wood purchase records. The evidence of "HSE_CP2_MP3_Wood&Diesel_Purchase"/WDP/ is checked and the value is verified as correct. Also the Wood purchase	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/IPCC/	invoices/WPI/ during this MP is cross checked with the record, and is verified that the value used in the MR is correct. During the monitoring period totally 996.5 m^3 wood was purchased and this value is transparently used to arrive at the final value of **0.012** tCO_2e for further calculations. During remote verification, it was confirmed that the usage of Diesel&Gasoline for power generation at factory is negligible and is found to be less than 0.1% of total emissions and hence it is excluded from the leakage emissions. PP has provided a transparent calculation process in the Monitoring report, for the exclusion of emissions on account of consumption of diesel for power generation at Hydrologic Factory. Verification Team verified Diesel&Gasoline purchase records "HSE_CP2_MP3_Wood&Diesel_Purchase"/WDP/ and confirmed that totally 10,400 liters of Diesel and 210 liters of Gasoline were purchased and consumed during Monitoring period. Also the Diesel&Gasoline purchase invoices/DGPI/ during this MP is cross checked with the record, and is verified that the value used in the MR is correct. The calculation done is found conservative and PP has used IPCC default value for diesel emission factor/IPCC/. PP has only used the Fire wood consumption for calculating Leakages due to implementation of Project. PP has not considered the leakages due to elimination of lower carbon emission method of Water treatment. PP has provided a justification for excluding this emission. The justification found correct as there is no water treatment in use which has a lower emissions – this decision is taken based on the results of project survey done by the PP. The exclusion is found correct and hence acceptable. *Verifier´s action:* The wood and diesel using is confirmed by remote verification and the value is confirmed by cross checking the		

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		"HSE_CP2_MP3_Wood&Diesel_Purchase"/WDP/ and Wood purchase invoices/WPI/ & Diesel&Gasoline purchase invoices/DGPI/. *Conclusion:* The calculation process is documented as per approved 2nd Crediting Period PDD and applied methodology.		
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met.* *Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I2/ /PDD/ /MR/ /TPDDTEC/ /XLS/ /WDP/ /WPI/ /DGPI/ /IPCC/	*Description:* No monitoring equipment needed as the values of wood and diesel are derived from the invoices. And the others parameters used in the formular are derived from IPCC default value/IPCC/. *Verifier´s action:* The value is confirmed by cross checking the "HSE_CP2_MP3_Wood&Diesel_Purchase"/WDP/ and Wood purchase invoices/WPI/ & Diesel&Gasoline purchase invoices/DGPI/. *Conclusion:* Applicable QA/QC procedures are met.	OK	OK
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/PDD/ /MR/ /TPDDTEC/ /XLS/ /WDP/ /WPI/ /DGPI/ /IPCC/	☐ Correct ☒ Not correct (initial assessment) *Description:* The value of $LE_{p,y}$ during this monitoring period is reported in the MR based on the calculation of formular in the PDD and the data source are "HSE_CP2_MP3_Wood&Diesel_Purchase"/WDP/ and cross checking with Wood purchase invoices/WPI/ & Diesel&Gasoline purchase invoices/DGPI/. *Verifier´s action:* By means of checking the "HSE_CP2_MP3_Wood&Diesel_Purchase"/WDP/ and cross checking with Wood purchase invoices/WPI/ & Diesel&Gasoline purchase invoices/DGPI/ *Conclusion:* The value of Quantity of wood purchased for factory is not correct.	~~CAR 05~~	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		CAR 05 was raised.		
T. SDG 1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural). Three parameters were selected to be monitored for this indicator: - The amount of fuel save, Percentage of household noted on money save and Percentage of household noted on time save after using the project technology.		***Net benefit (a) of SDG1*- Total amount of biomass fuel saves**		
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I1/ /I3/ /TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/	*Description:* By comparing the data provided in the monitoring survey report for this MP/MSR/ and value of baseline scenario, it is clear that the biomass fuel was saved during this MP. The value is calculated as stated in section E.1, E.2 and E.3 of the MR. The result is verified as correct by checking the ER spreadsheet. PP has established adequate arrangements for monitoring and measurement of the SDG indicators. The Data collected through Surveys found properly analyzed and calculated correctly to arrive at the conclusion. The claim made by the PP towards SDG1 contribution is correct. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:* The survey and calculation process is documented as per approved transition annex and applied methodology.	OK	OK
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled*	/I1/ /I3/ /TA/	*Description:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs. *Describe whether all applicable QA/QC procedures are met.* *Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/MR/ /TPDDTEC/ /XLS/ /MSR/	No monitoring equipment needed as the total amount of biomass fuel saves is calculated basing on the monitoring survey report/MSR/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:* Applicable QA/QC procedures are met.		
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/	☒ Correct ☐ Not correct (initial assessment) *Description:* The value of total amount of biomass fuel saves 65,540 t is reported in the MR calculated basing on monitoring survey report/MSR/, and the value is verified as correct by checking the ER spreadsheet/XLS/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:* The value is correct.	OK	OK
U. SDG 1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural). Three parameters were selected to be monitored for this indicator: - The amount of fuel save, Percentage of household noted on money save and Percentage of household noted on time save after using the project technology.		***Net benefit (b) of SDG1* - Total amount of LPG saves**		
a) Measurement / Determination method (VVS, §§ 389-393)	/I1/ /I3/	*Description:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero). *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/	By comparing the data provided in the monitoring survey report for this MP/MSR/ and value of baseline scenario, it is clear that the LPG was saved during this MP. The value is calculated as stated in section E.1, E.2 and E.3 of the MR. The result is verified as correct by checking the ER spreadsheet. PP has established adequate arrangements for monitoring and measurement of the SDG indicators. The Data collected through Surveys found properly analyzed and calculated correctly to arrive at the conclusion. The claim made by the PP towards SDG1 contribution is correct. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:* The survey and calculation process is documented as per approved transition annex and applied methodology.		
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I3/ /TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/	*Description:* No monitoring equipment needed as the total amount of LPG saves is calculated basing on the monitoring survey report/MSR/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:* Applicable QA/QC procedures are met.	OK	OK
c) Correctness	/TA/	☒ Correct ☐ Not correct (initial assessment)	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
(VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/MR/ /TPDDTEC/ /XLS/ /MSR/	*Description:* The value of total amount of LPG saves 956 t is reported in the MR calculated basing on monitoring survey report/MSR/, and the value is verified as correct by checking the ER spreadsheet/XLS/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:* The value is correct.		
V. SDG 1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural). Three parameters were selected to be monitored for this indicator: - The amount of fuel save, Percentage of household noted on money save and Percentage of household noted on time save after using the project technology.		***Net benefit (c) of SDG1-* Percentage of household noted on money save after using the project technology**		
a) Measurement / Determination method ***(VVS, §§ 389-393)*** *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I1/ /I3/ /TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/ /QUE/	*Description:* By checking the data provided in the monitoring survey report for this MP/MSR/, it is confirmed that 82.10% of household noted on money save after using the project technology during this MP. PP has established adequate arrangements for monitoring and measurement of the SDG indicators. The Data collected through Surveys found properly analyzed correctly to arrive at the conclusion. The claim made by the PP towards SDG1 contribution is correct. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and comparing with the original questionnaires/QUE/. *Conclusion:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		The survey and calculation process is documented as per approved transition annex and applied methodology.		
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met.* *Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I3/ /TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/ /QUE/	*Description:* No monitoring equipment needed as the percentage of household is based on the monitoring survey report/MSR/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and comparing with the original questionnaires/QUE/. *Conclusion:* Applicable QA/QC procedures are met.	OK	OK
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/ /QUE/	☒ Correct ☐ Not correct (initial assessment) *Description:* The value of percentage of household noted on money save after using the project technology 82.10% is reported in the MR based on monitoring survey report/MSR/, and the value is verified as correct by comparing with the original questionnaires/QUE/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and comparing with the original questionnaires/QUE/. *Conclusion:* The value is correct.	OK	OK
W. SDG 1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural). Three parameters were selected to be monitored for this indicator: - The amount of fuel save,		***Net benefit (d) of SDG1-* Percentage of household noted on time save after using the project technology**		

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Percentage of household noted on money save and Percentage of household noted on time save after using the project technology.				
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I1/ /I3/ /TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/ /QUE/	*Description:* By checking the data provided in the monitoring survey report for this MP/MSR/, it is confirmed that 91.20% of household noted on time save from boiling water and 87.6% of household noted on time save from avoiding collecting or purchasing fuel. Hence, the average is calculated as 91.20% of household noted on time save after using the project technology during this MP. PP has established adequate arrangements for monitoring and measurement of the SDG indicators. The Data collected through Surveys found properly analyzed correctly to arrive at the conclusion. The claim made by the PP towards SDG1 contribution is correct. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and comparing with the original questionnaires/QUE/. *Conclusion:* The survey and calculation process is documented as per approved transition annex and applied methodology.	OK	OK
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.*	/I1/ /I3/ /TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/ /QUE/	*Description:* No monitoring equipment needed as the percentage of household is based on the monitoring survey report/MSR/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and comparing with the original questionnaires/QUE/. *Conclusion:* Applicable QA/QC procedures are met.	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.				
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/ /QUE/	☒ Correct ☐ Not correct (initial assessment) *Description:* The value of percentage of household noted on time save after using the project technology 91.20% is reported in the MR based on monitoring survey report/MSR/, and the value is verified as correct by comparing with the original questionnaires/QUE/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and comparing with the original questionnaires/QUE/. *Conclusion:* The value is correct.	OK	OK
X. SDG 3.9.1 Mortality rate attributed to household and ambient air pollution. The number of people who notice less smoke in kitchen after having water filter is the monitored parameter		***Net benefits of SDG3*- Number of people using CWP and note that their kitchen is less smoke**		
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I1/ /I3/ /TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/	*Description:* By checking the data provided in the monitoring survey report for this MP/MSR/, it is confirmed that 566,367 people notice that their kitchen is less smoke during this MP. The number of people value is calculated based on the equation of below, *number of people* = $T_{p,y}$ * $N_{p,y}$ * $U_{p,y}$ * $WQ_{Passed,y}$ *$N_{Less\_smoke,y}$. The result is verified as correct by checking the ER spreadsheet. PP has established adequate arrangements for monitoring and measurement of the SDG indicators. The Data collected through Surveys found properly analyzed and calculated correctly to	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		arrive at the conclusion. The claim made by the PP towards SDG3 contribution is correct. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:* The survey and calculation process is documented as per approved transition annex and applied methodology.		
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I3/ /TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/	*Description:* No monitoring equipment needed as the value is calculated basing on the monitoring survey report/MSR/ and other verified parameters. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:* Applicable QA/QC procedures are met.	OK	OK
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/	☒ Correct ☐ Not correct (initial assessment) *Description:* The value is reported in the MR calculated basing on monitoring survey report/MSR/ and calculation, and the value is cross-checked by the ER spreadsheet/XLS/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		The value is correct.		
Y. SDG 5.4.1 Proportion of time spent on unpaid domestic and care work, by sex, age and location. The number of women and girls benefiting from stop/reducing boiling water and collecting/purchasing cooking fuel is the monitored parameter.		***Net benefits of SDG5- The number of women and girls benefiting from stop/reduce boiling water and collecting/purchasing cooking fuel***		
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I1/ /I3/ /TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/	*Description:* By checking the data provided in the monitoring survey report for this MP/MSR/, it is confirmed that **56.25%** of women and girls per household and 253,713 women and girls benefit from stop boiling water who are responsible for water boiling and collecting/purchasing cooking fuel before having CWPs during this MP. The number of people value is calculated based on the equation of below, *number of people* = $T_{p,y}$ * $N_{p,y}$ * $U_{p,y}$ * $WQ_{Passed,y}$ **(1-C_j)* Women%_HH * Women%_cooking* The result is verified as correct by checking the ER spreadsheet. PP has established adequate arrangements for monitoring and measurement of the SDG indicators. The Data collected through Surveys found properly analyzed and calculated correctly to arrive at the conclusion. The claim made by the PP towards SDG5contribution is correct. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:* The survey and calculation process is documented as per approved transition annex and applied methodology.	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I3/ /TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/	*Description:* No monitoring equipment needed as the value is calculated basing on the monitoring survey report/MSR/ and other verified parameters. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:* Applicable QA/QC procedures are met.	OK	OK
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/	☒ Correct ☐ Not correct (initial assessment) *Description:* The value is reported in the MR calculated basing on monitoring survey report/MSR/ and calculation, and the value is cross-checked by the ER spreadsheet/XLS/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:* The value is correct.	OK	OK
Z. SDG 6.1.1 Proportion of population using safely managed drinking water services. The number of people with access to safe drinking water is the monitored parameter		***Net benefits of SDG6- Number of people with access to safe drinking water***		
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also*	/I1/ /I3/ /TA/	*Description:* By checking the data provided in the monitoring survey report for this MP/MSR/ and Water Quality Test Reports/WQTR/, it is confirmed	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
describe the applied data aggregation trails (from ODL to data aggregation level zero). *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/MR/ /TPDDTEC/ /XLS/ /MSR/ /WQTR/	that 746,201 of surveyed households' water quality pass WHO standard for drinking water during this MP. The SDG impact is calculated based on the equation of below, **Project impact of SDG6 = $T_{p,y}$ * $N_{p,y}$ *$U_{p,y}$ * $WQ_{Passed,y}$** The result is verified as correct by checking the ER spreadsheet. PP has established adequate arrangements for monitoring and measurement of the SDG indicators. The Data collected through Surveys found properly analyzed and calculated correctly to arrive at the conclusion. The claim made by the PP towards SDG6 contribution is correct. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and Water Quality Test Reports/WQTR/ and the ER spreadsheet/XLS/. *Conclusion:* The survey and calculation process is documented as per approved transition annex and applied methodology.		
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I3/ /TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/ /WQTR/	*Description:* No monitoring equipment needed as the value is calculated basing on the monitoring survey report/MSR/ and other verified parameters. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and Water Quality Test Reports/WQTR/ and the ER spreadsheet/XLS/. *Conclusion:* Applicable QA/QC procedures are met.	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/ /WQTR/	☐ Correct ☒ Not correct (initial assessment) *Description:* The value is reported in the MR calculated basing on monitoring survey report/MSR/, Water Quality Test Reports/WQTR/ and calculation, and the value is cross-checked by the ER spreadsheet/XLS/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and Water Quality Test Reports/WQTR/ and the ER spreadsheet/XLS/. *Conclusion:* The value is correct.	OK	OK
AA. SDG 7.1.2 Proportion of population with primary reliance on clean fuels and technology. Amount of energy saves from avoiding boiling water under the project activity is the monitored parameter.		***Net benefits of SDG7 - Amount of energy saved from avoiding boiling water***		
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I1/ /I3/ /TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/	*Description:* By checking the data provided in the monitoring survey report for this MP/MSR/, it is confirmed that the parameters usded for calculate the amount of energy saved from avoiding boiling water is monitored correctly during this MP. The SDG impact is calculated based on the equation of below, **Project *SDG7 contribution = (Amount of biomass use in baseline scenario – Amount of biomass use in project scenario) * $NCV_{b,wood}$ +(amount of LPG use in baseline -LPG use in project) * $NCV_{b,LPG}$*** The result is verified as correct by checking the ER spreadsheet. PP has established adequate arrangements for monitoring and measurement of the SDG indicators. The Data collected through	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		Surveys found properly analyzed and calculated correctly to arrive at the conclusion. The claim made by the PP towards SDG7 contribution is correct. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:* The survey and calculation process is documented as per approved transition annex and applied methodology.		
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I3/ /TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/	*Description:* No monitoring equipment needed as the value is calculated basing on the monitoring survey report/MSR/ and other verified parameters. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:* Applicable QA/QC procedures are met.	OK	OK
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/	☒ Correct ☐ Not correct (initial assessment) *Description:* The value is reported in the MR calculated basing on monitoring survey report/MSR/ and calculation, and the value is cross-checked by the ER spreadsheet/XLS/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		The value is coorrect.		
BB. SDG8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities. The number of new job created by the project with safe and healthy work environment is the monitored parameter.		***Net benefit of SDG8- Number of new job created by the project with safe and healthy work environment***		
a) Measurement / Determination method (VVS, §§ 389-393) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I1/ /I2/ /I4/ /TA/ /MR/ /SL/ /ERIG/ /PAY/ /LC/	*Description:* The number of new job created by the project with safe and healthy work environment presented in the Monitoring report was derived from the HSE_CP2-MP3_Em&Inc2020/ERIG/, which is cross-checked by latest staff list/SL/, labor contracts/LC/ and monthly payroll/PAY/ in 2020. From the data and presented information in the monitoring report it was observed that during the current monitoring period, the total staffs employed by Hydrologic is 85 with 41 females. This is also confirmed by email interview with the HR staff/I4/. Furthermore, via interview with the staff representatives/I2/,/I4/, it is verified that Hydrologic has provided safe and healthy work environment to them. PP has established adequate arrangements for monitoring and measurement of the SDG indicators. The Data collected through Surveys found properly analyzed and calculated correctly to arrive at the conclusion. The claim made by the PP towards SDG8 contribution is correct. *Verifier´s action:* The value is confirmed by checking the HSE_CP2-MP3_Em&Inc2020/ERIG/, which is cross-checked by latest staff list/SL/, labor contracts/LC/ and monthly payroll/PAY/ in 2020. *Conclusion:* The survey and calculation process is documented as per approved transition annex and applied methodology.	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I2/ /I4/ /TA/ /MR/ /SL/ /ERIG/ /PAY/ /LC/	*Description:* No monitoring equipment needed as the value derived from the HSE_CP2-MP3_Em&Inc2020/ERIG/. *Verifier´s action:* The value is confirmed by checking the HSE_CP2-MP3_Em&Inc2020/ERIG/, which is cross-checked by latest staff list/SL/, labor contracts/LC/ and monthly payroll/PAY/ in 2020. *Conclusion:* Applicable QA/QC procedures are met.	OK	OK
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/I1/ /I2/ /I4/ /TA/ /MR/ /SL/ /ERIG/ /PAY/ /LC/	☒ Correct ☐ Not correct (initial assessment) *Description:* The value is reported in the MR derived from the HSE_CP2-MP3_Em&Inc2020/ERIG/ and the staffs were interviewed for confirmation. *Verifier´s action:* The value is confirmed by checking the HSE_CP2-MP3_Em&Inc2020/ERIG/, which is cross-checked by latest staff list/SL/, labor contracts/LC/ and monthly payroll/PAY/ in 2020. *Conclusion:* The value is coorrect.	OK	OK
CC. SDG 13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula. The total amount of emission reduction is the monitored parameter.		***Net benefits of SDG13 - Amount of ER***		
a) Measurement / Determination method (VVS, §§ 389-393)	/I1/	*Description:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero). *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I3/ /TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/	By checking the data provided in the monitoring survey report for this MP/MSR/, it is confirmed that the parameters usded for calculate the ER is monitored correctly during this MP. Refer to section E.8 for details of ER calculation assessment. The result is verified as correct by checking the ER spreadsheet. PP has established adequate arrangements for monitoring and measurement of the SDG indicators. The Data collected through Surveys found properly analyzed and calculated correctly to arrive at the conclusion. The claim made by the PP towards SDG13 contribution is correct. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:* The survey and calculation process is documented as per approved 2nd CP PDD, transition annex and applied methodology.		
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I3/ /TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/	*Description:* No monitoring equipment needed as the value is calculated basing on the monitoring survey report/MSR/ and all the verified parameters. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:* Applicable QA/QC procedures are met.	OK	OK
c) Correctness	/TA/	☐ Correct ☒ Not correct (initial assessment)	~~CAR 06~~	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
(VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/MR/ /TPDDTEC/ /XLS/ /MSR/	*Description:* The value is reported in the MR calculated basing on monitoring survey report/MSR/, and the value is cross-checked by the ER spreadsheet/XLS/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:* The value is not correct due to the days used in 2020 is 365 not 366. CAR 06 was raised.		
DD. SDG 15.1.1 Forest area as a proportion of total land area. The area of forest save is monitored indicator.		***Net benefits of SDG15 - Area of forest save***		
a) Measurement / Determination method ***(VVS, §§ 389-393)*** *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level but also describe the applied data aggregation trails (from ODL to data aggregation level zero).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/I1/ /I3/ /TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/	*Description:* By checking the data provided in the monitoring survey report for this MP/MSR/, it is confirmed that the parameters usded for calculate the area of forest save is monitored correctly during this MP. The SDG impact is calculated based on the equation of below, ***Project impact of SDG15 = (Amount of biomass use in baseline scenario – Amount of biomass use in project scenario) * $f_{NRB,y}$ /Growth stock in forest*** The result is verified as correct by checking the ER spreadsheet. PP has established adequate arrangements for monitoring and measurement of the SDG indicators. The Data collected through Surveys found properly analyzed and calculated correctly to arrive at the conclusion. The claim made by the PP towards SDG15 contribution is correct. *Verifier´s action:*	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
		The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:* The survey and calculation process is documented as per approved transition annex and applied methodology.		
b) Accuracy and QA/QC Procedure (VVS, §§ 394-400) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met.* *Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.* *Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.*	/I1/ /I3/ /TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/	*Description:* No monitoring equipment needed as the value is calculated basing on the monitoring survey report/MSR/ and other verified parameters. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:* Applicable QA/QC procedures are met.	OK	OK
c) Correctness (VVS, §§ 389-393) *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/TA/ /MR/ /TPDDTEC/ /XLS/ /MSR/	☒ Correct ☐ Not correct (initial assessment) *Description:* The value is reported in the MR calculated basing on monitoring survey report/MSR/, and the value is cross-checked by the ER spreadsheet/XLS/. *Verifier´s action:* The value is confirmed by checking the monitoring survey report/MSR/ and the ER spreadsheet/XLS/. *Conclusion:* The value is coorrect.	OK	OK