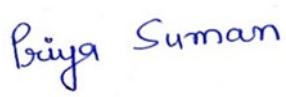
**Verification and certification report forGS project activities**

| BASIC INFORMATION | |
|---|---|
| **Title and GS reference number of the project activity** | Production and dissemination of Ceramic Water Purifiers by Hydrologic, in the Kingdom of Cambodia<br>Reference number of the project Activity: GS1020 |
| **Scale of the project activity** | ☒Large-scale<br>☐Small Scale |
| **Version number of the verification and certification report** | 1.2 |
| **Completion date of the verification and certification report** | 25/06/2024 |
| **Monitoring period number and duration of this monitoring period** | Monitoring Period: 6th<br>Monitoring duration: 01/01/2023- 31/12/2023 (including both the dates) |
| **The version number of the monitoring report to which this report applies** | Version 2.4, Dated :21/06/2024 |
| **The crediting period of the project activity corresponding to this monitoring period** | CP2: 01/12/2017 to 30/11/2024 (both days included) (Twice Renewable CP) |
| **Project participants** | Hydrologic Social Enterprise Ltd. |
| **Project representative(s)** | Hydrologic Social Enterprise Ltd. |
| **Host Party** | Kingdom of Cambodia |
| **Applied methodologies and standardized baselines** | Technologies and Practices to Displace Decentralized Thermal Energy Consumption Version 3.0-July 2015 |
| **Sectoral scopes, if applicable** | Scope 3: Energy Demand<br>Scope 1: Energy (renewable / non-renewable sources) |
| **Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD** | 82,885 $tCO_2e$ |
| **Certified amount of GHG emission reductions or GHG removals for this monitoring period** | 103,069$tCO_2e$ |
| **SDG Impacts:** | Goal 1: No Poverty<br>Goal 3: Good Health and Well-Being<br>Goal 5: Gender Equality<br>Goal 6: Clean Water and Sanitation<br>Goal 7: Affordable and Clean Energy<br>Goal 8: Decent work and economic growth Goal 13: Climate Action<br>Goal 15: Life on Land |

| | SDG | Values estimated in ex ante calculation of approved PDD for this monitoring period. | Actual values[1] achieved during this monitoring period |
|---|---|---|---|
| | 1 | (a) 57,997 tonne of biomass save/year<br>(b) 837 tonne of LPG save/year<br>(c) 88.20% of household noted on money save<br>(d) 89.60% of household noted on time save | a) 57,363 tonne of biomass save/year after using project technology<br>(b) 1,128 tonne of LPG save/year after using the project technology<br>(c) 62.70% of household noted on money save<br>(d) 95.69% of household noted on time save after using the project technology |
| | 3 | 674,137 people noted less smoke in kitchen | 387,831 people noted less smoke in kitchen after having water filter after using the project technology |
| | 5 | 316,033 women and girls benefit from stop boiling water | 173,735 women and girls benefiting from stop/reduce boiling water and collecting/purchasing cooking fuel. After using the project technology |
| | 6 | 737,568 people access to safe drinking water | 510,977 people access to safe drinking water after using the project technology |
| | 7 | 909 TJ of energy save/year | 914 TJ of energy save/year |
| | 8 | 105 staff employed/year | 100 staff employed after implementation of project technology. |
| | 13 | GHG emission reductions – 82,885 tCO2e/year | GHG emission reductions – 103,069 tCO2e after using the project technology |
| | 15 | 357 hectare of forest save/year | 354 hectare of forest is saved after implementation of project technology. |

[1] Whenever emission reductions are capped, both the original and capped values used for calculations must be transparently reported. Use brackets to denote original values.

| | |
|---|---|
| **Name and UNFCCC reference number of theVVB** | E-0052: Carbon Check (India) Private Ltd. |
| **Name, position and signature of the approverof the verification and certification report** |  <br>Priya Suman, Compliance Officer |

## SECTION A. Executive summary

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The Project activity 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 CO2 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 2-4.5 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, where these filters are produced utilizing local skilled and unskilled workers. By implementing the project Hydrologic has provided an opportunity for local community to generate steady and continual income for their livelihood.

Hydrologic Social Enterprise Ltd. has so far distributed total 554,586[2] units of CWP in different provinces of host country cumulatively since the project start date (01/12/2010), and 26,252[3] units sold during this monitoring period from 01/01/2023 to 31/12/2023, which is verified by checking the sales record/05/ and project database/06/. The Certified Emissions Reduction for the current 6th monitoring period from 01/01/2023 to 31/12/2023 is 103,069 tCO2e.

This report summarizes the findings of the verification of the project, performed on the basis of gold standard for global goals (GS4GG), as well as criteria given to provide for consistent project operations, monitoring and reporting and the subsequent decisions by the Gold Standard. Verification is required for all registered GS project activities intending to confirm their achieved emission reductions and proceed with request for issuance of ERs. This report contains the findings and resolutions from the verification and a certification statement for the verified emission reductions.

Verification is the periodic independent review and ex-post determination of both quantitative and qualitative information by a Validation & Verification body (VVB) of the monitored reductions in GHG emissions that have occurred as a result of the registered GS project activity during a defined monitoring period.

Certification is the written assurance by a Validation & verification body (VVB) that, during a specific period, a project activity achieved the emission reductions as verified.

The objective of this verification was to verify and certify emission reductions reported for the "Production and dissemination of Ceramic Water Purifiers by Hydrologic, in the kingdom of Cambodia" in the host country "Cambodia" for the 2nd crediting period 01/12/2017 to 24/11/2024 (Including both days) and the monitoring period covered in this verification is 01/01/2023 to 31/12/2023.

The purpose of verification is to review the monitoring results and verify that the monitoring methodology was implemented according to the monitoring plan and monitoring data and used to confirm the reductions in anthropogenic emissions by sources, are sufficient, definitive and presented in a concise and transparent manner. CCIPL's objective is to perform a thorough, independent assessment of the registered project activity.

In particular, the monitoring plan, monitoring report and the project's compliance with relevant GS and host Party criteria are verified in order to confirm that the component project/s has/have been implemented in

[2] Source: ER calculation spreadsheet, Tab: Units_monthly, sum (E6:E162)
[3] Source: Sale database

accordance with the previously registered project design and conservative assumptions, as documented. It is also confirmed if the monitoring plan is in compliance with the registered/revised PDD/14/ and the approved monitoring methodology/B01/.

**Scope:**

The scope of the verification is:

- To verify the project implementation and operation with respect to the registered PDD /14/
- To verify the implemented monitoring plan with the registered PDD /14/ and applied baseline and monitoring methodology/B01/.
- To verify that the actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.
- To verify that reported GHG emission data is sufficiently supported by evidence.

The verification shall ensure that the reported emission reductions are complete and accurate in order to be certified.

**Verification process**:

The verification comprises a review of the monitoring report over the monitoring period from 01/01/2023 to 31/12/2023(Including both days) and based on the registered PDD /14/ in part of the monitoring parameters and monitoring plan, emission reduction calculation spreadsheet, monitoring methodology/B01/ and all related evidence provided by project participant.

Document review and On-site interviews are also performed as part of the verification process.

**Conclusion:**

The verification team assigned by the Validation &Verification body (VVB) concludes that the monitoring report (version 2.4 dated 21/06/2024)/01/, meets all relevant requirements of the Gold Standard as per the requirements of GS4GG. The verification has been conducted in line with the GS4GG requirements.

The project activity was correctly implemented according to the selected monitoring methodology, monitoring plan and the registered PDD/14/. The monitoring system was implemented, and maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. Through the document review and On-site interviews, the verification team confirms that the project activity has resulted in the 103,069tCO2e SDG impact (as per the approved methodology) achieved in this monitoring period.

CCIPL as a Validation & Verification body (VVB) is therefore pleased to issue a positive verification opinion expressed in the Certification statement in this report.

## 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 DOE or outsourced entity) | Involvement in | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Desk/document review | Site Visit | Interviews | Verification findings |
| 1. | Team Leader / Verifier / Technical Expert | IR | Sharma | Harish | CCIPL | X | X | X | X |
| 2. | Trainee Assessor | IR | Yadav | Shalini | CCIPL | X | NA | NA | X |
| 3 | Local Expert | ER | Socheat | Sorin | CCIPL | NA | X | X | NA |

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

| No. | Role | Type of resource | Last name | First name | Affiliation (e.g., name of central or other office of DOE or outsourced entity) |
|---|---|---|---|---|---|
| 1. | Technical reviewer | IR | C. | Indumathi | CCIPL |
| 2. | Approver | IR | Suman | Priya | CCIPL |

## SECTION C. Means of verification

### C.1. Desk/document review.

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The verification was performed primarily based on the review of the Monitoring report /01/ and the supporting documentation. This process included review of data and information presented to verify their completeness and a review of the monitoring plan and monitoring methodology. Documents reviewed or referenced during the verification are listed in Appendix 3 below.

### C.2. On-site inspection

GS4GG Principal and requirement version 1.2/B02/ and GS site visit and remote audit requirement v2.0/B02/, VVB is required to conduct an on-site inspection for large-scale project activity. Furthermore, an on-site visit is being done for the verification activity. The following activities have been carried out during on-site visit.

The verification team has carried out on-site interviews with enumerators involved in monitoring to assess the information included in the project design document, and stakeholder consultation report. During the desk review, the relevant records related to project design, implementation and operation were checked, stakeholders engaged, and implementing agency and on-site beneficiary interviews were taken on a sampling basis.

The verification team applied a sampling approach for on-site interviews as part of verification in accordance with paragraph 26 of the Standard: Sampling and surveys for CDM project activities and programs of activities, Version 09.0//B03-1/. In accordance with paragraph 28 of the sampling standard, acceptance sampling has been chosen by the verification team, and accordingly, the steps listed in paragraph 29 of the

sampling standard were followed. So, in accordance with paragraph 39 (c) of the sampling standard the Verification team opted for AQL of 0.5% and UQL of 20%; producer risk of 10 %, and consumer risk of 5 % in determining the VVB's sample size for which the sample size (n) is 20 with acceptance number (c) 0. Accordingly, we plan to do the site visits for 20 households/Samples from the PP's sample size for the project for the monitoring period with acceptance number (c) as 0. In accordance with the §39 (c) of the sampling standard, sample size of 20 is appropriate for Cambodia.

The assessment of implementation status of distribution projects or projects having dispersed and number of components, it is pertinent that the VV Team shall assess that all physical features (technology, project equipment, and monitoring and metering equipment) of the project as specified in the PDD/14/ are in place and that the client has operated the registered project as per the registered or any approved PDD.

### C.3. Consideration of materiality in conducting the verification

**The intended user's materiality threshold, including the qualitative and quantitative components:**
As GS4GG Validation and verification standard version 01 does not specifies materiality threshold for the large-scale project and therefore VV team has referenced the materiality threshold for the large-scale project activity from CDM standard, as per clause 9.1.2.3. Application of materiality of CDM VVS/B02-g/ para 326 (d)which is 5% of emission reductions or removals for registered projects activity achieving a total emission reduction or removal of less than or equal to 300,000 tons of CO2e per year. The level of assurance considered is reasonable assurance.

| S.No | Project Activity | Emission Reduction (VERs) (tCO2e) | Materility threshold | Applied Mateiality threshold (VERs) |
|---|---|---|---|---|
| 1 | GS1020 | 103,069 | 5% | 5154 |

In conducting the verification, VVB took cognizance of §13-17 of the Guideline: "Application of materiality in verifications" (version 2.0) and based on the input of data from different sources checked through sampling records. Based on the assessment carried out, CCIPL confirms with a reasonable level of assurance that the claimed emission reductions are free from material errors, omissions, or misstatements.

### C.4. Interviews with PD

Interviews of CWPs users were taken by a Verification team. All surveys were conducted in person and photos of end users and GPS coordinates were taken as records. Submitted photos, snapshots, and ER sheets maintained of the site survey were checked by the verification team to confirm that VVB team has interviewed the PD team members involved in the survey and the 20 end users.

| No. | Interviewee | | | Date | Subject | Team member |
|---|---|---|---|---|---|---|
| | Last name | First name | Affiliation | | | |
| 1 | Bora | I.M | Hydrological Social Enterprise | 13/05/2024 | - General aspects of the project<br>- Changes since validation / previous verifications<br>- Calibration procedures<br>- CWP distribution status<br>- Project database<br>- -Sales record | Harish Sharma<br>Sorin Socheat |
| 2 | Chanvibol | Meng | Nexus for Development | 13/05/2024 | | Harish Sharma<br>Sorin Socheat |
| 3 | Sovanna | Mean | Nexus for Development | 13/05/2024 | | Harish Sharma<br>Sorin Socheat |
| 4 | Raksmey | Me | Hydrological Social Enterprise | 13/05/2024 | | Harish Sharma<br>Sorin Socheat |
| 5 | Rosmey | Kong | Hydrological Social Enterprise | 13/05/2024 | | Harish Sharma<br>Sorin Socheat |
| 6 | Raksmaywng | Ban | Factory Manger HSE | 13/05/2024 | | Harish Sharma<br>Sorin Socheat |
| 7 | Sopheap | hong | worker at HSE | 13/05/2024 | | Harish Sharma<br>Sorin Socheat |

| | | | | | | |
|---|---|---|---|---|---|---|
| 8 | Rech | sok | worker at HSE | 13/05/2024 | - grievance mechanism<br>- -Sampling and Monitoring | Harish Sharma<br>Sorin Socheat |
| 9 | Veasna | sum chan | worker at HSE | 13/05/2024 | | Harish Sharma<br>Sorin Socheat |
| 10 | Phal | Lach | worker at HSE | 13/05/2024 | | Harish Sharma<br>Sorin Socheat |
| 11 | Hom | Ratana | PCSO | 13/05/2024 | | Harish Sharma<br>Sorin Socheat |

### C.5. Interviews with End- Users

| SR. No | Users Name | SurveyDate | Subject | Team Member |
|---|---|---|---|---|
| 1 | Pork Yith | 14/05/2024 - 16/05/2024 | - Quality management system<br>- Involved personnel and responsibilities.<br>- Training and practice of the operational personnel<br>- Implementation of the monitoring plan<br>- Sampling Plan<br>- Sampling Method<br>- Project survey<br>- Baseline survey<br>- Monitoring data management<br>- Data uncertainty and residual risks<br>- Procedural aspects of the verification<br>- Environmental aspects<br>- Job opportunities<br>- Salary level<br>- Water quality and quantity<br>- Livelihood of the poor<br>- Access to energy service<br>- Monitoring plan<br>- Monitoring training<br>- Emission reduction calculation<br>- CWP Production Process<br>- Warranty Card<br>- Environmental aspects<br>- Salary level<br>- Staff Management<br>- Position<br>- Job Description<br>- Salary level<br>- Labor contract<br>- Welfare<br>- Food allowance<br>- Safety training | Harish Sharma<br>Sorin Socheat |
| 2 | Den Soran | 14/05/2024 - 16/05/2024 | | Harish Sharma<br>Sorin Socheat |
| 3 | An Sopha | 14/05/2024 - 16/05/2024 | | Harish Sharma<br>Sorin Socheat |
| 4 | Deb Norn | 14/05/2024 - 16/05/2024 | | Harish Sharma<br>Sorin Socheat |
| 5 | Tuy savy | 14/05/2024 - 16/05/2024 | | Harish Sharma<br>Sorin Socheat |
| 6 | Yin Nin | 14/05/2024 - 16/05/2024 | | Harish Sharma<br>Sorin Socheat |
| 7 | Hour Ouk | 14/05/2024 - 16/05/2024 | | Harish Sharma<br>Sorin Socheat |
| 8 | Ban Sokhey | 14/05/2024 - 16/05/2024 | | Harish Sharma<br>Sorin Socheat |
| 9 | Yang yon | 14/05/2024 - 16/05/2024 | | Harish Sharma<br>Sorin Socheat |
| 10 | Sat Im | 14/05/2024 - 16/05/2024 | | Harish Sharma<br>Sorin Socheat |
| 11 | Soth Sokhom | 14/05/2024 - 16/05/2024 | | Harish Sharma<br>Sorin Socheat |
| 12 | Phat San | 14/05/2024 - 16/05/2024 | | |
| 13 | Morm Sokham | 14/05/2024 - 16/05/2024 | | |
| **14** | Seb Krot | 14/05/2024 - 16/05/2024 | | |
| **15** | Tath Mara | 14/05/2024 - 16/05/2024 | | |

| | | | | |
|---|---|---|---|---|
| **16** | sim Siema | 14/05/2024 - 16/05/2024 | | |
| **17** | Sot Tuor | 14/05/2024 - 16/05/2024 | | |
| **18** | Hang Ly | 14/05/2024 - 16/05/2024 | | |
| **19** | Uch Samath | 14/05/2024 - 16/05/2024 | | |
| **20** | Tey Pet | 14/05/2024 - 16/05/2024 | | |

## SECTION D. Verification findings

### D.1. Remaining forward action requests from Validation and/or previous verifications

This is the 6th verification of the project activity, there are no FARs from previous verificationreport/04/.

### D.2. General Description of the project activity

| | |
|---|---|
| **Means of verification** | DR, I, OSV |
| **Findings** | -- |
| **Conclusion** | 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<br>Further every section has been checked against the GS4GG Principles& Requirements/B02-a/.<br>The project is implemented in line with the PDD/14/ confirmed by site visit. Through site visit, CCIPL 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 site interview with CWP users. The objective of the project is to reduce / eliminate the water boiling practice and thereby reduce the CO2 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 a 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/10/, where these filters are produced utilizing local skilled and unskilled workers. By implementing the project Hydrologic has provided an opportunity for the local community to generate steady and continual income for their livelihood. For this monitoring period, 26,252 units of CWP have been sold, and total 554,586 units of CWP sold in different provinces of host country cumulatively since the crediting period start date of the project (01/12/2010) which is verified by checking the sales record/16/ and project database/23/ with actual Emissions Reduction for the current monitoring period from 01/01/2023 to 31/12/2023 is 103,069 tCO2e.<br><br>Furthermore, for the usage of the CWP status, PD has considered that usage rate calculation does not account for the retired units i.e. units with age more than 5 years. Hence, VVB confirmed that the project technologies were working within their useful lifetime during the monitoring period and the technologies which were not within lifetime have been removed from the project ER calculation and no longer credited. The project is applicable to the GS approved “Technologies and Practices to Displace Decentralized Thermal Energy Consumption” (Version 3.0)/B01/. The project boundary for the distribution of the CWP is in Kingdom of Cambodia. The location of factory is at Trapeang Samrong Village, Sub-district of Longveak, District of Kampong Tralach, Province of Kampong Chhnang, Cambodia. The detailed geographic coordinates of the project included in this monitoring period is listed as below: |

| Description | 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 Kampong Tralach, Province of Kampong Chnang |
| Latitude | 11.8504° N |
| Longitude | 104.7419° E |

The project location has been clearly provided in section A.2 of the MR, which has been verified by site inspection with GPS device and comparing with location in google earth and the detailed coordinates of factory and all the involved provinces, cities, and capital have been provided which are verified as correct by checking the google earth map.
The starting date of operation of the project activity was 09/02/2010 when Hydrologic committed financially by signing a contract with a contractor to build the factory and GS Crediting period start date is 01/12/2010, when production of CWPs for the crediting period began which has been confirmed in the PDD /14/ .and the latest 2nd crediting period Validation report /18/. 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/18/ and previous verification reports/04/, the project participant has adopted for the renewable crediting period of 21 years with the start date of 2nd crediting period of 01/12/2017 and ended on 30/11/2024. This monitoring period belongs to the 2nd crediting period. As part of the site visit the Verification Team was able to confirm that the project description in MR is in accordance with the project description contained in the PDD/14/

it can be confirmed that the final version Monitoring report/01/ is complete and transparent and in accordance with the PDD/14/ and Global Goals Monitoring Report Template version 1.1 in October 2020. Refer to the below sections for details.

### D.3. Compliance of the project implementation and operation with the registered project design document

| | |
|---|---|
| **Means of verification** | DR, I, OSV |
| **Findings** | -- |
| **Conclusion** | By means of an in-depth review of the PDD/14/ and the checks carried out during the site visit, an assessment has been carried out whether the project has been implemented and operated in line with the PDD and whether all physical features of the project are in place. The following has been checked: implemented technology, project equipment as well as monitoring equipment. The verification team has conducted site visits with checking the project operation and interview with PD, end users, local stakeholders, retailer and NGO, in addition by all the provided evidence, it is found that the project has been put into operation and CWP are being sold and it is found that the implementation of the project activity is in accordance with the PDD/14/. 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. PD has provided justifications for the changes and these changes are accounted correctly while calculating emission reductions/2/. PD has so far sold 26,252 units during this monitoring period from 01/01/2023 to 31/12/2023, which is verified by checking the sales record/05/ and project database/06/. The emission reductions achieved during this monitoring period are 103,069 tCO2e/2/. The details of verification against changes incorporated by PD during this monitoring period are provided in the respective sections and there is no significant change observed in the project operation comparing with PDD/14/. Hydrologic has introduced two models till Mar. 2021, during April and December 2021, Hydrologic introduced one more product named “Tunsai Autofill” in the market. For this monitoring period, after leaning from its market testing, Hydrologic has changed its name from “Tunsai Autofill” into “Tunsai Thom” for the unit without autofill tool and “Tunsai Thom Autofill” for unit with autofill tool while its technical specification remains the same. This change was made based on the market testing result showing that some people like |

the design of the new product but want to save costs by not adding the autofill tool, while other want the full set of that new product, this has been confirmed by checking the sales record/05/ and cross check with the invoices. PD has provided detailed specifications along with picture of the new types of CWP in the MR section B.1. The technical parameters of the new types have been provided as below table.

| **Model** | **Tunsai** | **Super Tunsai** |
|---|---|---|
| Filter Element Type | Ceramic Clay Pot | Ceramic Clay Pot |
| Filter Capacity (Volume) | Approx. 10 L | Approx. 10 L |
| Filter Capacity (flow) | Typically – 2-4.5 L/Hr<br>Typically – 30L/Day | Typically – 2-4.5 L/Hr<br>Typically – 30L/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 |
| **Model** | **Tunsai Thom** | **Tunsai Thom Autofill*** |
| Filter Element Type | Ceramic Clay Pot | Ceramic Clay Pot |
| Filter Capacity (Volume) | Approx. 10 L | Approx. 10 L |
| Filter Capacity (flow) | Typically – 2-4.5 L/Hr<br>Typically – 30L/Day | Typically – 2-4.5 L/Hr<br>Typically – 30 L/Day |
| Receptacle Type | Closed safe storage food grade plastic receptacle | Closed safe storage food grade plastic receptacle |
| Receptacle Storage Capacity (Volume) | Approx. 14 L | Approx. 18 L |
| Spigot Type | Plastic | Plastic |
| Plastic Type | Food Grade Polypropylene | Food Grade Polypropylene |

On site inspection of different types of Tunsai in factory and checking the specifications/12/ for the two types, CTI confirmed that “Tunsai Thom” and “Tunsai Thom Autofill” are having the same technical specification, except the Tunsai Thom Autofill is equipped with “Autofill tool” which automatically fill CWP with the piped water’s network.

Through checking the specifications for all the four types especially the new type, verification team herewith confirms that the specifications of Ceramic water Purifiers (CWP) are the same as provided in the MR and specifications/07/.

Furthermore, based on the project design, it is verified that no classification for the two models (“Tunsai” and “Super Tunsai”) 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 (upgrade from 12L to 14L) and the physical appearance which does not result in different performance, which has been confirmed by checking the CWP specifications for two models/07/ and previous on-site inspection of the CWP production plant.

For the new types “Tunsai Thom” and “Tunsai Thom Autofill”, through checking the specification/12/, the verification team confirmed that same to the comparison between “Tunsai” and “Super Tunsai”, the new type has the same characteristic with the only difference being the size of the receptacle (upgrade from 14L to 18L) and the physical appearance which does not result in different performance, thus no classification for the 4 models is needed for emission reduction calculation.

For the sales of the four types, by site inspection and interview with sales staff from PD, representatives from retail sales agent and NGO, and checking the sales record/05/ and cross check with the related invoices, the verification team confirmed that Hydrologic sold CWP through three main channels:

Direct sales to end users by Hydrologic sales staff.

Sales to retail sales agents who purchase CWPs wholesale and sell them to retailers and local intermediaries.

NGOs that purchase wholesale CWPs typically sell them at a subsidized price. Il the interviewees confirmed sales during site visit and CCIPL confirmed the sales. channel information in MR is actual and reasonable.

This is the 6th monitoring period of the 2nd crediting period, and the verification team herewith confirms that the project implementation is consistent since the project started as mentioned in the PDD/14/. There are no major obstructions or

| | |
|---|---|
| | gaps noted during this monitoring period.<br><br>The actual Sold and operation are found in accordance with description provided in the PDD/14/. There is Change/ change evidenced during this monitoring Period and however there were no delays compared to information in approved projects. The detailed assessment has been provided under section D.1.5 of the VR<br><br>Assessment concludes the following:<br>• The implementation status of project activity was found to in compliance with PDD/14/.<br>• CTI has conducted the site visit to confirm the implementation status of the project with regards to the realized technology.<br>• The actual operation of project activity was found to be in compliance with PDD/14/.<br>• There were no delays compared to information in the approved project. |

**D.4. Stakeholder inputs and legal disputes**

<table>
<tr><td>Means of verification</td><td>As confirmed through interview with the users, it is verified that the Grievance Mechanism/Continues Inputs has been in place. As per site interview with the sampled end-users, it is found 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.<br>And via checking the “HSE_CP2MP5_Hotline Tracking Record 2022”/16/ and “HSE_CP2-MP5_Replacement 2022”/17/, 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 PD and proper action has been taken to solve the problems.<br>After that, it is verified that there are no comments/complaints received from the users during this monitoring period of the project activity.<br>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 PD 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.<br>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.<br>For the stakeholder mitigations that were agreed to be monitored which has been listed in the GS passport that assessed as above
<table>
<tr><td>Sustainability indicators/Stakeholder mitigations</td><td>Assessment</td></tr>
<tr><td>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</td><td>During the stakeholder consultation stage, there was a request for not selling CPW at a higher price. To address this request, PP calculate the price of CWP based on break-even price + 10% markup. For this monitoring period, there is no significant change in terms of average selling price compared to the previous MP (CP2-MP5) being 34.70$ and 34.54$ respectively. VVB assessed that the purpose of the break-even analyses submitted by the PP is to address the stakeholder concern raised during stakeholder consultation stage that the price should not be kept high to increase the profit margin. VVB has reviewed the sale receipt of the different CWPs and found that the weighted average of the selling price remained almost same price compared to the previous MP (CP2-MP5) being 34.70$ and 34.54$ respectively which is within the break-even price. Based on review of following documents,<br>- Break Even Price Jan – Dec 2023/19-A/<br>- Break Even Price Jan – Dec 2023/19-B/</td></tr>
</table>
</td></tr>
</table>

| | | | |
|---|---|---|---|
| | | | - Expense Summary Breakeven Jan – Dec 2023 /19-C/<br>- Expense Summary Breakeven Jan – Dec 2022 /19-D/<br>- sales database/05/<br>VVB considers the stakeholder concern adequately addressed.. |
| | | 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. | The VVB has reviewed the provided information of the annual inventory and consumption data "Raw Clay Report" /20/ for the clay use from the inventory records. The documentation confirms the sufficient stock from the previous purchase in 2018 from a nearby licensed brick factory. Furthermore, during OSV the VVB has witnessed the clay stock. Based on the records provided by VVB and OSV observation, the VVB considers CAR adequately addressed and closed. |
| | | 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, PD shall investigate the reason and take appropriate action. PD believes that this risk is low because there are so many salespeople that competition will keep the price low | VVB has confirmed through interviews of end users that in most of the cases the filter is working proper and for those who has changed filter were offered the filter replacement free of cost.<br><br>Hence it is concluded that the prices are reasonable. |
| **Findings** | CAR 6 and CAR 7 were raised to clarify the stakeholder concerns. Both the CAR were successfully closed. | | |
| **Conclusion** | All the methods of continuous input /grievance mechanism are confirmed during site visits and interviews. CCIPL verified that there were no comments/complaints received from the stakeholders during this monitoring period of the project activity. | | |

## D.5 Post-registration changes

### D.5.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents.

>>
Not Applicable

### D.5.2. Corrections

>>
Not applicable

### D.5.3. Changes to the start date of the crediting period

>>
Not applicable

### D.5.4. Inclusion of a monitoring plan

>>
Not applicable

### D.5.5. Permanent changes from the registered monitoring plan, or permanent Change of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents

Through documentary review and OSV, the VVB observed a permanent Change in the project monitoring plan as during the current monitoring period the PP has changed the Kiln from wood to LPG fired one. This is a permanent change from the design certified monitoring plan as now it involves the monitoring of LPG instead of fuel wood. VVB has raised clarification /CL2/ for the observed issue.
After a thorough review of the PP's response to CL2, the VVB has made the following observations:

**Revised Monitoring Report Sections B.2.4:**
Section B.2.4: The PP has updated required section B.2.4, to accurately reflect the permanent change in the fuel source for the kiln from wood to LPG. The update clarifies that this change is part of an improvement initiative aimed at enhancing the working environment and reducing GHG emissions at the production line. The completion of the kiln's preparation and installation in January 2023 is documented in the summary report of the LPG kiln installation/14/.

**Supporting Documentation:**
The PP has provided a summary report of the LPG kiln installation, confirming that the installation and preparation were completed in January 2023. This report along with the annexures to the report serves as the commissioning and installation certificate required for verification.

**VVB Assessment:**

There is a permanent change of the sources of leakage in the registered PDD /14/ in which PP used firewood to fuel the kilns to fire the ceramic pots.

The updates to sections B.2.4 and B.2.5 of the MR are consistent with the permanent changes from the originally certified monitoring plan PDD version 11.2 /14/. These revisions ensure the MR accurately reflects the current operational practices and their environmental impact. The summary report along with its annexures provided by the PP satisfactorily documents the commissioning and installation of the LPG kiln, aligning with the details mentioned in the MR.

Based on the revised MR and the supporting documentation PDD version 11.2 /14/ provided by the PP, the VVB concludes that the clarification request has been adequately addressed. The revisions have been appropriately incorporated into the MR, and the necessary evidence has been reviewed and accepted. Also, VVB concludes that these changes does not affect the aspects mentioned in sec 4.1.1 (Additionality of the project activity, Applicability of the methodology and other methodological regulatory documents with which the project activity has been certified, Compliance with the monitoring plan and the applied methodology, Level of accuracy and completeness in the monitoring of the project activity compared with the requirements contained in the design certified monitoring plan, e. Scale of the project activity, Stakeholder consultation, Sustainable development criteria,) of the GS design change requirements Ver 1.1

### D.5.6. Changes to the project design

Through documentary review and OSV, the VVB observed a permanent Change in the project monitoring plan as during the current monitoring period the PP has changed the Kiln from wood to LPG fired one. This is a permanent Change from the design certified monitoring plan PDD version 11.3 dated 13/06/2024/14-B/ as now it involves the monitoring of LPG instead of fuel wood. VVB has raised clarification /CL2/ for the observed issue.

After a thorough review of the PP's response to CL2, the VVB has made the following observations:

**Revised Monitoring Report Sections B.2.5:**

Section B.2.5: The PP has revised this section to indicate the monitoring and recording of LPG usage instead of firewood. The revised section includes details on how the GHG emissions from burning LPG will be calculated and documented in the ER calculation sheet.

**Supporting Documentation:**

The PP has provided a summary report of the LPG kiln installation, confirming that the installation and preparation were completed in January 2023. This report along with the annexures to the report serves as the commissioning and installation certificate required for verification.

**VVB Assessment:**

There is a permanence change of the sources of leakage in the registered PDD /14/ in which PP used firewood to fuel the kilns to fire the ceramic pots.

The updates to sections B.2.4 and B.2.5 of the MR are consistent with the permanent Change from the originally certified monitoring plan. These revisions ensure the MR accurately reflects the current operational practices and their environmental impact. The summary report along with its annexures provided by the PP satisfactorily documents the commissioning and installation of the LPG kiln, aligning with the details mentioned in the MR.

Based on the revised MR and the supporting documentation PDD version 11.3 dated 13/06/2024/14-B/ provided by the PP, the VVB concludes that the clarification request has been adequately addressed. The revisions have been appropriately incorporated into the MR, and the necessary evidence has been reviewed and accepted.

Also, VVB concludes that these changes does not affect the aspects mentioned in sec 4.1.1 i.e. Additionality of the project activity, Applicability of the methodology and other methodological regulatory documents with which the project activity has been certified, Compliance with the monitoring plan and the applied methodology, Level of accuracy and completeness in the monitoring of the project activity compared with the requirements contained in the design certified monitoring plan, e. Scale of the project activity, Stakeholder consultation, Sustainable development criteria,) of the GS design change requirements Ver 1.1

### D.6. Compliance of the registered monitoring plan with applied methodologies, applied standardized baselines, and other applied methodological regulatory documents.

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|---|---|
| **Means of verification** | Document Review, Interview |
| **Findings** | - |
| **Conclusion** | The verification team has confirmed the monitoring plan from registered PDD, monitoring methodology and applicable tools used during this monitoring period. The verification team has confirmed the monitoring procedures during the on-site interviews with enumerators and end users and from document review by means of comparison with the information given in the monitoring plan and monitoring methodology. VVB confirms that the monitoring plan is in accordance with the approved methodology /B01/ as included registered PDD /14/. |

### D.7. Compliance of monitoring activities with the registered monitoring plan

### D.7.1. Data and parameters fixed ex ante or at renewal of crediting period.

| | |
|---|---|
| **Means of verification** | Document Review, Interview |
| **Findings** | -- |
| **Conclusion** | The verification team confirms that the data and parameters fixed ex-ante are in compliance with the registered/ PDD /14/ and monitoring plan. Please refer to the Annex 1 for assessment of each parameter. |

### D.7.2. Data and parameters monitored.

| | |
|---|---|
| **Means of verification** | Document Review, Interview |
| **Findings** | - |
| **Conclusion** | The verification team confirms that the data and parameters monitored follow the registered/revised PDD /14/ and the monitoring plan provided in registered PDD/14/.<br>It is confirmed that the verification team assessed the data/information flow from the point of monitoring to emission reduction calculation and found no gap in the same.<br>Detailed assessment of each parameter has been provided in Annex 2 |

### D.7.3. Implementation of sampling plan

| | |
|---|---|
| **Means of verification** | Document Review, Interview |
| Findings | |
| Conclusion | The monitoring has been carried out in accordance with the monitoring plan contained in the PDD/14/. |
| | Sampling Design/Target Population/Sampling Frame/Reliability:<br><br>Sampling approach by PD<br>The sampling design carried out by the project is demonstrated as below:<br>Before preparing the MR, PD conducted the monitoring sampling survey for investigate the values used for this monitoring period for monitored parameters, which is verified as in line with the monitoring plan requirement in the PDD/14/ and methodology requirement of the applied methodology/B01/. 9 monitored parameters including QP, y, QP,rawboil,y, QP,cleanboil,y, WQPassed,y, Np,y, Up,y, Wb,y,LPG(large), Wp,y,LPG(large) and Wb,y,WEIGHTED, LPG are need to be determined based on the monitoring sampling survey and ongoing monitoring studies which has been assessed one by one as below,<br>Monitoring sampling Survey<br>The monitoring survey and field test was conducted by Absolute Consulting Services (ACS) from 18 to 31 December 2022 including usage survey, project survey and water consumption field test, and the results have been combined in the monitoring survey report for this monitoring period/01/. Based on checking the report, theverification team confirmed that total of 184 households who have ever owned CWP participated in the usage survey across the 4 representative provinces of Kampong Speu, Banteay Meanchey, Kandal and Kampot. Out of these 184 households, 161 households are currently still using CWP and they are eligible for participating in the project survey.<br><br>Wb***,y,LPG(large), Wp,y,LPG(large)*** **and** ***Wb,y,WEIGHTED,LPG***<br>These 3 parameters need to be monitored through Baseline Water Boiling test (BWBT).<br>By checking the project survey result/18/, CTI confirmed that there is no change for water boiling technologies from that of the baseline as determined in PDD/14/, i.e. wood and charcoal with traditional cookstove and or improved cookstove, and LPG with LPG stove. Hence, as per the applied methodology and registered PDD/14/, it requested that "If the monitoring surveys reveal that the same water boiling technologies are prevalent in the baseline and project scenarios, $W_{b,y}$ and $W_{p,y}$ are equal. The BWBT should be updated if monitoring surveys show that water boiling technologies change over time<br><br>hence the verification team confirmed that BWBT is no need to be updated in this MP.<br>So upon no change of BWBT, the monitored parameters including $W_{b,y,TRAD,wood}$, $W_{p,y,TRAD,wood}$, *Wb,y,TRAD,charcoal, Wp,y,TRAD,charcoal, Wb,y,IMP,Wood, Wp,y,IMP,Wood, Wb,y,IMP,charcoal, Wp,y,IMP,charcoal, Wb,y,LPG(small), Wp,y,LPG(small), Wb,y,LPG(large), Wp,y,LPG(large), Wb,y,WEIGHTED,wood, Wb,y,WEIGHTED,charcoal and Wb,y,WEIGHTED,LPG* are same to the values provided in last monitoring period and therefore no need to be re-assessed in this MP.<br><br>***QP,y*****,** ***QP,rawboil,y, QP,cleanboil,y*** and ***NP,y***<br>These 4 parameters need to be monitored through the Water Consumption Field Test (WCFT).<br>Through checking the report/18/, CTI confirmed that 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/3/ and methodology requirement/B01/. |

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| | PD has determined a sample size of 129 for WCFT which is withing the<br><br>recommended sample range between 101 and 137 sample by TPDDTEC 3.0 and in line with the 90/10 rule as defined in the sample number calculation, and the margin of error at 90% level of confidence is less than 10%.<br>And as per the applied methodology and registered PDD, CTI confirmed that the monitoring frequency is every two years, the last WCFT was conducted in December 2020, so the frequency request is fulfilled.<br>Through checking the WCFT sampling method as stated in the monitoring survey report/18/, it is verified that the method is in line with the PDD sampling plan/3/, methodology requirement/45/ and GS rules/58/.<br><br>**Ongoing monitoring studies**<br>***$U_{p,y}$***<br>Usage survey (US) has been conducted for determine the value of $U_{p,y}$.<br>PD has determined a sample size of 100 for US which is in line with the sample size determination for usage survey in PDD (minimum total sample size for Usage Survey is 100, with at least 30 samples for project technologies of each age being credited) and is also in line with the methodology requirement/45/. End users for project survey have been selected using representative sampling techniques to ensure adequate representation of users with technologies of different ages. For this monitoring period, by checking the sampling frame for this MP/22/ and monitoring survey report/18/, the verification team confirmed that the sample size determination for usage survey (total 184 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”.<br>PD 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. Through checking the sampling method as stated in sampling frame for this MP/22/ and monitoring survey report/18/, it is verified that the method is in line with the PDD sampling plan/3/ and methodology requirement/45/, and based on checking all the sampling records, CTI confirmed that the sampling monitoring survey results are reasonable for determine the monitored parameters for this monitoring period.<br><br>***WQPassed,y*** Through checking the updated rule of “Application of TPDDTEC Methodology to safe water supply projects” issued on 30/06/2022/46/, the verification team confirmed that according to the section 2.2.2: “The project, PoA and VPAs applying Annex 3 of TPDDTEC may opt for “Water quality testing” requirements outlined for parameter SDWS 18 in Methodology for emission reductions from safe drinking water supply v.1.0 - annual water quality testing. If this option has been opted, the activity shall follow all requirements and limitations outlined for parameter SWDS 18”, PD has opted for “Water quality testing” requirements as annual water quality testing. Hence, the requirements outlined for parameter SDWS 18 in Methodology for emission reductions from safe drinking water supply v.1.0/50/ has been followed for conduct the monitoring of Water quality testing.<br>PD conducted the water quality test annually from 17/02/2022 to 04/03/2022 for this monitoring period in line with the monitoring frequency of annual water quality testing.<br>PD took a sample number 45 (greater than that of the minimum 30 of the methodology/50/)/26/ for water quality test which is in line with the 90/10 rule as defined in the water quality protocol/25/. The sampling ensures at least a 90% confidence level and a 10% margin of error (±10%) in the results.<br>Through checking the sampling method as stated in the water quality test protocol/25/, it is verified that the method is in line with the “Application of TPDDTEC Methodology to safe water supply projects” issued on 30/06/2022/46/ and parameter SDWS 18 requirements in Methodology for emission reductions from safe drinking water supply v.1.0/50/.<br><br>**Sampling approach by VVB** |

CCIPL conducted the verification of sampling results with the following steps according to "Sampling and Surveys for CDM Project Activities and Program of Activities" version 09.0/54/ and "Guideline of Sampling and surveys for CDM project activities and programmes of activities" version 04.0/53/:

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 programs of activities" version 04.0/53/, 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 37,438 as determined in the sales record/16/, 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 $1.645^2$*37,438*0.9*(1-0.9)/{(37,438-1)*0.12*0.92+1.6452*0.9*(1-0.9)}=31. Hence, the verification team randomly selected 96 (8 per month) invoice reference numbers from the sales record/16/ and checked related sales invoices/17/ which is more than 31 sample size requirements during this monitoring period, the invoices are cross checked with the sales record/16/, 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 37,438 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 PD original data, so 45 samples (greater than that of the minimum 30 of the methodology/50/)/26/ were checked by verification team and it is verified that all the 45 Water Quality test results are consistent with the PD data and final calculation result average percentage of 90% is verified as correct and credible based on the sample results conducted on annually base. For the sampling survey for parameter $WQ_{Passed,y}$, it is verified that PD followed 90/10 precision rule which means the result of the test for samples is meeting this precision.

For project survey 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. And for WCFT, sampling rules at least 101 samples.

For parameter $QP_{,y}$, $QP_{,rawboil,y}$, $QP_{,cleanboil,y}$, $N_{p,y}$, $U_{p,y}$, 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 09.0/54/ 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 PD sample records and the VVB sample records that are acceptable is determined as 0.5% and the proportion of discrepancies between the PD sample

| | |
|---|---|
| | records and VVB sample records that are unacceptable (UQL) is determined as 10% according to "Sampling and Surveys for CDM Project Activities and Program of Activities" version 08.0/54/. 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 Program of Activities"/54/:<br>(1) A 10% chance that the VVB will wrongly reject the PDs records (producer's risk).<br>(2) A 10% chance that the VVB will wrongly accept the PDs records (consumer's risk).<br>With the AQL of 0.5%, the UQL of 15%, the producer's risk of 10% and the consumer's risk of 5%, the size of the acceptance sampling is determined as 19 and the acceptance number is determined as 0 according to Table 2 of "Standard: Sampling and Surveys for CDM Project Activities and Program of Activities"/54/. To be more conservative, the verification team randomly selected 40 from the PD's sample records. Took a random sample selection of the PD's sample records/18/ using the excel function of random selection, and verification team conducted the site visit and interview of the 40 CWP users in households and get the results of the information related to all the related monitoring parameters.<br><br>**(b) Check the acceptability of the data for each record in the sample records based on the expertise.**<br>The sample records in the monitoring survey report/18/ is found to be consistent with the 40 samples selected by verification team from the sampling conducted by the PP. Also, no discrepancy is found between the sample records/18/ and the VVB sample records.<br>**(c) Based on the number of records where agreement is agreed, determine if the sample records meet the requirements.**<br>As there are no discrepant records, i.e. the discrepant record is less than the acceptance number of 1, the sample records/18/ is accepted as per "Sampling and Surveys for CDM Project Activities and Program of Activities"/54/.<br><br>**Reliability and precision calculation:**<br><br>The verification team has verified the ER calculation spreadsheets /02/ with the monitored data, where the actual achieved precision is calculated against the Guidelines outlined under "Standard for sampling and surveys for CDM project activities and Program of Activities, version 4.0" /B03-b/ and confirms that the calculation of achieved reliability was done correctly.<br><br>All parameters of interest are included in the ER spreadsheet for the monitoring period. These were checked for the input values as well as formula applied and were found consistent. The reliability (demonstration of precision achieved afterthe survey results) is depicted in the ER calculation sheets /02/ corresponding to final Monitoring Report /01/, which were also found correct.<br><br>Thus, VVB confirms necessary confidence/precision of 90/10 for each of the parameters is met. This has been cross verified by the verification team from the supporting documents submitted. |

### D.8. Compliance with the calibration frequency requirements for measuring instruments.

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| **Means of verification** | Document Review, Interview |
| **Findings** | - |
| **Conclusion** | N/A, since there is no monitoring equipment that require calibration. |

### D.9. Assessment of data and calculation of emission reductions or net removals.

| | |
|---|---|
| **Means of verification** | Document Review, Interview |
| **Findings** | - |

| | |
|---|---|
| **Conclusion** | The equations for baseline emissions, as provided in the monitoring report /01/ and confirmed with the registered PDD /14/, the methodology (Technologies and Practices to Displace Decentralized Thermal Energy Consumption Version 3.0-July 201501 /B01/and supporting tools are:<br><br>SDG 13: The methodology (Technologies and Practices to Displace Decentralized Thermal Energy Consumption Version 3.0-July 2015/B01/ directly provides the following equation for emission reductions; without separate baseline, project or leakage emission reduction equations.<br><br>When the baseline fuel and the project fuel are the same and the baseline emission factor and project emission are considered the same, the overall GHG reductions achieved by the project activity in year y are calculated as follows:<br>ERy = ∑b,p (Np,y* Up,y* Pp,b,y* NCVb, fuel * (f NRB,b, y * EFfuel, CO2 + EFfuel, nonCO2))– ∑ LEp,y (1)<br>Where: ∑b,p Sum over all relevant (baseline b/project p) couples<br>Np,y Cumulative number of project technology-days included in the project database for project scenario p against baseline scenario b in year y<br>Up,y Cumulative usage rate for technologies in project scenario p in year y, based on cumulative adoption rate and drop off rate revealed by usage surveys (fraction)<br>Pp,b,y Specific fuel savings for an individual technology of project p against an individual technology of baseline b in year y, in tons/day, as derived from the statistical analysis of the data collected from the field tests<br>f NRB,b, y Fraction of biomass used in year y for baseline scenario b that can be established as non-renewable biomass (drop this term from the equation when using a fossil fuel baseline scenario)<br>NCVb,fuel Net calorific value of the fuel that is substituted or reduced (IPCC default for wood fuel, 0.015 TJ/ton)<br>EFb,fuel,CO2 CO2 emission factor of the fuel that is substituted or reduced. 112 tCO2/TJ for Wood/Wood Waste, or the IPCC default value of other relevant fuel EFb,fuel,nonCO2 Non-CO2 emission factor of the fuel that is reduced<br>LEp,y Leakage for project scenario p in year y (tCO2e/yr)<br><br>ERy = ∑ BEb,y – ∑ PEp,y – ∑ LEp,y equation (7)<br>Where: ERyEmission reduction for total project activity in year y (tCO2e/yr) BEp,y Baseline emissions for baseline scenario b in year y (tCO2e/yr)<br>PEb,y Project emissions for project scenario p in year y (tCO2e/yr) 26<br>LEp,y Leakage for project scenario p in year y (tCO2e/yr)<br><br>From the above equation and the parameter values, emission reductions forthe period 01/01/2023 to 31/12/2023(inclusive of both dates) are calculated as:<br><br>GS5642: 103,069VERs<br><br>The verification team confirms that the calculation of baseline emission and emission reductions is in accordance with the applied methodological equation and the registered PDD/14/. Calculations have been checked and confirmed from the ER spreadsheet/02/.<br><br>The verification took cognizance of (Technologies and Practices to Displace Decentralized Thermal Energy Consumption Version 3.0-July 2015)/ 01 /B01 |

### D.9.1. Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks

**>> NA**

### D.9.2. Calculation of leakage GHG emissions

| | |
|---|---|
| **Means of verification** | Document Review, Interview |
| **Findings** | - |
| **Conclusion** | PP has switched from wood to LPG to fuel the kiln to fire the ceramic pots from. It should be noted that this fuel switch is done as part of Hydrologic improvement at production line for better working environment as well as reducing GHG emission at the production line. The preparation and installation of the kiln was completed within January 2023 as shown in the summary report of the LPG Kiln installation/14/".<br><br>VVB has assessed the provided supporting evidence /14/ and found that summary report of the LPG kiln installation, confirming that the installation and preparation were completed in January 2023. This report along with the annexures to the report serves as the commissioning and installation certificate required for verification.<br><br>Based on the revised MR and the supporting documentation provided by the PP, the VVB concludes that the clarification request has been adequately addressed. The revisions have been appropriately incorporated into the MR, and the necessary evidence has been reviewed and accepted. |
| | Project leakage = Leakage per unit * Total distributed water purifier |
| | Leakage per unit per year = Weight of wood per m3 * quantity of wood purchased for factory * carbon content in the wood * fNRB * (molecular weight of CO2/molecular weight of carbon)/ conversion from Kg to tonnes/ number of units sold in this monitoring period. |

### D.9.3. Summary calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

| | |
|---|---|
| **Means of verification** | Document Review, Interview |
| **Findings** | - |
| **Conclusion** | The verification team confirms that all parameters are used correctly in the calculations, all results are verifiable and transparent, all assumptions are described and based on verifiable evidence, and calculations are done in accordance with the pre-defined formulae from PDD/14/. The total number of ERs achieved during the monitoring period for is 103,069VERs.<br><br>In summary, the verification team confirms that the actual emission reduction is higher than the estimate of the PDD for the current monitoring period.<br><br>The verification took cognizance of registered PDD and GS4GG requirements. |

| **Title and GS reference number of the project activity** | **Baseline emissio ns or baseline net GHG removal s by sinks ($tCO_2e$)** | **Project emissionsor actual net GHG removals by sinks ($tCO_2e$)** | **Leakage ($tCO_2e$)** | **GHG emission reductions or net GHG removals by sinks ($tCO_2e$)** |
|---|---|---|---|---|
| | | | | **Amount achievedin the monitoring period 1st January 2023 to 31st December 2023** |
| Production and dissemination of Ceramic Water Purifiers by Hydrologic, in the Kingdom of Cambodia | 139,797 $tCO_2e$ | 36,728 $tCO_2e$ | - | 103,069 $tCO_2e$ |

| | | | | |
|---|---|---|---|---|
| **Total** | | | | **103,069 tCO2e** |

**D.9.4. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD.**

| | |
|---|---|
| **Means of verification** | Document Review, Interview |
| **Findings** | - |
| **Conclusion** | A comparison of the actual GHG emission reductions with the estimates in the included specific project activity is given in the below table. The verification team took cognizance of registered PDD/B03/ and GS4GG requirements/B02/. |

| Title and GS reference number of the project activity | Value estimated in ex-ante calculation in the included PDD | Actual values achieved by the project during this monitoring period |
|---|---|---|
| Production and dissemination of Ceramic Water Purifiers by Hydrologic, in the Kingdom of Cambodia | 82,885 | 103,069 |

**D.9.5. Comparison of monitored parameters with last monitoring period.**

| Description of Data/Parameter | parameter | Unit | Value obtained in this monitoring period (CP2-MP6) | Value obtained last monitoring period (CP2-MP5) | Remark on any significant difference |
|---|---|---|---|---|---|
| Total distributed water purifier | $T_{p,y}$ | CWP | 26,252.00 | 37,438.00 | The sale in this MP is lower than last MP which is not good for Hydrologic. To address this, PD is planning to recruit more sale staffs and expand its target areas. |
| Weighted average usage rate | $U_{p,y}$ | Percentage | 81.65% | 87.80% | The usage rate in this MP is slightly lower than that of the previous MP. |
| Water quality passing rate | $WQ_{Passed,y}$ | Percentage | 93.33% | 93.33% | The water quality passing rate in this MP is similar to that of the previous MP. |
| Number of people attending hygiene meeting | Hygiene Campaigns | People | 74,079.00 | 103,817.00 | Number of people attending hygiene campaign is less than the last MP. In this MP, more focus was on the production line where the introduction of LPG Kiln was done to replace kiln run by burning woods. |
| Number of persons. Days consuming water supplied by project scenario p | $N_{p,y}$ | People | 1,507.45 | 1,507.45 | The annual number of person days in this MP is the same as that of the previous year. The previous |

| | | | | | |
|---|---|---|---|---|---|
| through year y | | | | | MP data is still valid and it is used in this MP as well. |
| Quantity of purified water consumed in the project scenario p per person per day | $Q_{p,y}$ | Litres/person/day | 1.74 | 1.74 | The value of $Q_{p,y}$ is the same as that of last year as for this MP, $Q_{p,y}$ of the previous year was used under his MP as well. |
| The raw or unsafe water that is still boiled after installation of the CWP | $Q_{p,rawboil,y}$ | Litres/person/day | 0.60 | 0.60 | $Q_{p,rawboil,y}$ is the same as that of the previous MP. |
| Quantity of safe water (treated or from safe supply) boiled in the project scenario p, after installation of the CWP | $Q_{p,cleanboil,y}$ | Litres/person/day | 0.04 | 0.04 | $Q_{p,cleanboil,y}$ is the same as that of the previous MP. |

The verification team confirms that all parameters are used correctly in the calculations, however the some of the parameters from current monitoring period are slightly less than the previous monitoring period which was cross checked with estimated values from registered PDD/B03/ and all results are verifiable and transparent, all assumptions are described and based on verifiable evidence, and ER sheet calculation /02/ are done in accordance with the pre-defined formulae from PDD/B03/.

### D.9.6. Remarks on difference from estimated value in registered PDD

| **Means of verification** | Document Review, Interview |
|---|---|
| **Findings** | -- |
| **Conclusion** | SDG 13: The ex-ante estimates value of the emission reductions is 82,885 $tCO_2e$ for the monitoring period 01/01/2023 to 31/12/2023 as per the registered/revised PDD /B03/.and the actual emission reductions achieved for the monitoring period 01/01/2023 to 31/12/2023 is 103,069 tCO2e./01/,/02/<br><br>VVB confirmed that for SDG3, SDG5, SDG6 ,SDG8 and SDG15 the actual value achieved during this MP are lower than estimation in PDD, but for SDG1(b,d), SDG7 and SDG13 , the values are higher, the verification team comparing all the ex-ante determined and ex-post monitored parameters in MR with the PDD and found that below parameters which are the decisive factors that influence the SDG impact outcomes, the reason is justified as accurate and plausible as below. |

| **Description** | **PDD/ER[4]** | **01/01/2023 – 31/12/2023[5]** | **Relevant Unit** | **Remarks** |
|---|---|---|---|---|
| $B_{b,y,wood}$ | 0.668 | 0.520 | tonnes /year | $B_{b,y,wood}$ is lower than that presented in the PDD which is mainly due to the change in $N_{p,y}$. |
| $B_{b,y,charcoal}$ | 0.033 | 0.019 | tonnes /year | $B_{b,y,charcoal}$ is lower than that presented in the PDD which is mainly due to the change in $N_{p,y}$. |
| $B_{b,y,LPG}$ | 0.013 | 0.011 | tonnes /year | $B_{b,y,LPG}$ is slightly lower than that presented in the PDD which is mainly due to the |

[4] CP2-1_HSE_CP2_PDD_20171129_Ver11.2_Final (AcceptedGS)_clean (page 40,41); and HSE_CP2_ER_Cal_20191027_R1 (Tab PDU Summary, Row 18-51), (Tab Nexus, Cell O12:Y12).

[5] ER spreadsheet, Tab (Parameter_Summary, column E18:E52), Tab (Parameter_Summary, column X18:X28.

| | | | | |
|---|---|---|---|---|
| | | | | change in $N_{p,y}$. |
| $N_{p,y}$ | 1,875.735 | 1,507.450 | person .days | Latest WCFT showed that the number of person per HH is lower than that applied in PDD being 4.13 and 5.139 person per day per household respectively. |
| $Q_{p,y}$ | 1.630 | 1.740 | Litres/ person /day | Latest WCFT showed that the $Q_{p,y}$ is slightly higher than that applied in PDD. |
| $Q_{p,rawboil,y}$ | 1.554 | 0.600 | Litres/ person /day | Latest WCFT showed that the $Q_{p,rawboil,y}$ is lower than that applied in PDD. |
| $Q_{p,cleanboil,y}$ | 0.050 | 0.040 | Litres/ person /day | Latest WCFT showed that the $Q_{p,clearnboil,y}$ is lower than that applied in PDD. |
| $W_{b,y,WEIGHTED,wood}$ | 0.000160 | 0.000211 | tonnes /year | $W_{b,y,WEIGHTED,wood}$ is slightly higher than that applied in PDD due to the new result from BWBT conducted in CP2-MP1. |
| $W_{b,y,WEIGHTED,charcoal}$ | 0.000008 | 0.000008 | tonnes /year | $W_{b,y,WEIGHTED,charcoal}$ is equal to that applied in PDD. |
| $B_{p,y,wood}$ | 0.357 | 0.138 | tonnes /year | $B_{p,y,wood}$ is lower than that presented in the PDD due to the change in volume of water consumed per HH. |
| $B_{p,y,charcoal}$ | 0.018 | 0.005 | tonnes /year | $B_{p,y,charcoal}$ is lower than that presented in the PDD due to the change in $W_{b,y}$ for charcoal from 138.9324grams/liter in PDD to 125 grams/liter (Capped value from GS Rule Update in this MP. |
| $B_{p,y,LPG}$ | 0.007 | 0.001 | tonnes /year | $B_{p,y,LPG}$ is lower than that presented in PDD due to differences in amount of water consumed per day. |
| $C_j$ | 0.260 | 0.260 | - | No change |
| $X_{boil}$ | 0.058 | 0.058 | - | No Change |
| $BE_{b,y,wood}$ | 0.951 | 0.904 | $tCO_2e$ | $BE_{b,y,wood}$ is slightly lower than that applied value in the PDD. |
| $PE_{p,y,wood}$ | 0.508 | 0.240 | $tCO_2e$ | $PE_{b,y,wood}$ is lower due to lower amount of water consumption per day per person. |
| $BE_{b,y,charcoal}$ | 0.286 | 0.194 | $tCO_2e$ | $BE_{b,y,charcoal}$ is lower than that presented in the PDD due to the change in Wb,y for charcoal from 138.9324grams/liter in PDD to 125 grams/liter (updated value from the Rule Update in this MP. |
| $PE_{p,y,charcoal}$ | 0.153 | 0.052 | $tCO_2e$ | $PE_{b,y,charcoal}$ is lower than that presented in the PDD due to differences in amount of water consumed per day. |
| $BE_{b,y,LPG}$ | 0.037 | 0.032 | $tCO_2e$ | $BE_{b,y,wood}$ is lower due to lower amount of water consumption per day per person. |
| $PE_{p,y,LPG}$ | 0.020 | 0.004 | $tCO_2e$ | $PE_{p,y,wood}$ is lower amount of water consumption per day |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | per person. |
| | $f_{NRB,y}$ | 77.00% | 95.01% | % | $f_{NRB,y}$ applied in PDD is expired in 2019, for this MP, PP has updated it with the value of 95.01% based on the newly GS's approved value of other GS project implemented in Cambodia GS751. |
| | $NCV_{b,wood}$ / $NCV_{p,wood}$ | 0.015 | 0.015 | TJ/ton | No change |
| | $NCV_{b,charcoal}$ / $NCV_{p,charcoal}$ | 0.030 | 0.030 | TJ/ton | No change |
| | $NCV_{b,LPG}$ / $NCV_{p,LPG}$ | 0.047 | 0.047 | TJ/ton | No change |
| | $EF_{b,wood,CO2}$ /$EF_{p,wood,CO2}$ | 112.000 | 112.000 | $tCO_2/TJ$ | No change |
| | $EF_{b,charcoal,CO2}$ /$EF_{p,charcoal,CO2}$ | 112.000 | 112.000 | $tCO_2/TJ$ | No change |
| | $EF_{b,LPG,CO2}$ /$EF_{p,LPG,CO2}$ | 63.100 | 63.100 | $tCO_2/TJ$ | No change |
| | $EF_{b,wood,nonCO2}$ / $EF_{p,wood,nonCO2}$ | 8.692 | 9.460 | $tCO_2/TJ$ | The increase is due to the application of the new GPW ($CH_4$, $NO_2$) of AR5 compared to that of AR4. |
| | $EF_{b,charcoal,nonCO2}$ / $EF_{p,charcoal,nonCO2}$ | 5.298 | 5.865 | $tCO_2e$/ TJ | The increase is due to the application of the new GPW ($CH_4$, $NO_2$) of AR5 compared to that of AR4. |
| | $BE_{b,y}$ | 1.274 | 1.130 | $tCO_2e$ | With lower water consumption per HH, baseline emission is lower than that applied in PDD. |
| | $PE_{p,y}$ | 0.681 | 0.297 | $tCO_2e$ | With lower water consumption per HH, project emission is lower than that applied in PDD. |
| | $U_{p,y}$ | 80.5 | 81.65 | % | Usage rate is slightly higher than that applied in PP. |
| | $LE_{p,y}$ | 0.00 | 0.00 | $tCO_2e$ | $LE_{p,y}$ is zero which lower than that applied in PDD. PD has introduced LPG Kiln at its production line in which the emission is minimal and it is negligible based on the registered methodology TPDDTEC3.0. |
| | % of passing Water Quality test | 80.00 | 93.33 | % | The passing rate of water quality test is higher than that projected in PDD. This might be due to the improvement of hygiene and operation and maintenance knowledge of CWP's users through PP's hygiene campaign. |
| | $ER_y$ | 0.58 | 0.83 | $tCO_2e$/ Unit | $ER_y$ is higher than that presented in PDD due to the above different applied |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | values, especially the newly updated $f_{NRB}$. |
| | Units sold | 49,614 | 26,252 | CWP | The demand for CWPs keeps on fluctuating and thus is lower than the estimated one. It should be noted that the sale estimated in PDD was forecasted in 2017 based on sale figure from 2013 to 2016 when the sale was high. The sale dropped significantly in 2018 due to Hydrologic staff restructuring and the general election in Cambodia which limited the promotion activity in the communities. During this MP (2023), the total sale from Jan to Dec was slightly lower than that of year 2022 being 26,252 and 37,438 CWPs respectively. |
| | SDG13 | 82,885 | 103,069 | $tCO_2e$ | Total ER in this monitoring period is more than that of PDD due to different and higher value of parameters applied as described above, especially the updated fNRB and water quality passing rate. |
| | SDG1(a) | 57,997.00 | 57,363 | tonnes | The amount of biomass save in this MP is slightly lower than that estimated in transition annex. This might be mainly due to the higher value of other associated parameters in this MP especially fNRB as mentioned above. |
| | SDG1(b) | 837.00 | 1,128 | tonnes | The amount of LPG save in this MP is higher than that estimated in transition annex. This might be mainly due to the higher usage rate and other associated parameters in this MP as mentioned above. |
| | SDG1(c) | 88.20% | 62.70% | % | This varies depend on the perception of the user response but around 62.10% of household noted on money save after using the project technology in this MP. |
| | SDG1(d) | 89.60% | 95.69% | % | This varies depend on the perception of the user response but around 95.69% of household noted on time save after using the project technology in this MP is a good indicator. |
| | SDG3 | 674,137 | 387,831 | People | Lower number of people who notice less smoke in kitchen after using CWPs in this MP compared to PDD. This varies |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | depend on the perception of the user response. |
| | SDG5 | 316,033 | 173,735 | Women and girls | Lower number of women and girls benefiting from stop/reduce boiling water and collecting/purchasing cooking fuel after using CWPs in this MP compared to PDD. This varies depend on the perception of the user response. |
| | SDG6 | 737,568 | 510,977 | People | Lower number of people access to safe drinking water after using CWPs in this MP compared to PDD. This might be mainly due to lower number of persons per each household in this MP compared to PDD as stated above. |
| | SDG7 | 909 | 914 | TJ | The amount of energy save in this MP is higher than that estimated in transition annex. This might be mainly due to the higher usage rate and other associated parameters in this MP which lead to higher biomass and LPG save as mentioned above. |
| | SDG8 | 105 | 100 | Staffs | The staff is fluctuating over the year. It is expected that more field staffs are recruited as PP is reopening/expanding its operation in more provinces in 2023 as post Covid-19 recovery activities. |
| | SDG15 | 357 | 354 | Hectare | The amount of area of forest save in this MP is slightly lower than that estimated in transition annex. This is mainly due to the lower amount of biomass save in this MP compared to transition annex as mentioned above. |
| | The actual impacts for SDG3, SDG5, SDG6 ,SDG8 and SDG15 during this MP are lower than estimation in PDD, but for SDG1(b,d), SDG7 and SDG13 , the values are higher, which is assessed as appropriate and accepted. | | | | |

**SECTION E. Internal quality control**

>>

The final verification report passed a technical review before being submitted to the Gold Standard. The technical review is performed by a technical reviewer qualified in accordance with CCIPL's qualification scheme for CDM Validation and verification.

**SECTION F. Verification/Certification opinion**

>>

Carbon Check (India) Private Ltd. (CCIPL) has performed the fourth ($6^{th}$) periodic verification (under the $2^{nd}$ crediting period) of the registered GS Project Activity "Production and dissemination of Ceramic Water Purifiers by Hydrologic, in the Kingdom of Cambodia." GS 1020.

The verification team assigned by the VVB concludes that the project activity as described in the PDD (version 11.2 dated: (05/02/2018)/14/ and the Monitoring report (version 2.4, dated 21/06/2024) /01/, meets all relevant requirements of the Gold Standard. The verification has been conducted in line with the GS4GG requirements for project activities.

Verification methodology and process

The Verification team confirms the contractual relationship signed on 02/04/2024 between /12/the VVB, Carbon Check (India) Private Ltd., and the Project Participant, Hydrologic Social Enterprise Ltd. The team assigned to the verification meets the CCIPL's internal procedures including the GS requirements for the team composition. and competence. The verification team has conducted a thorough contract review as per GS and CCIPL's procedures and requirements.

The verification has been performed as per the requirements described in the GS4GG and constitutes the review and completion of the following steps:

- Reviewing the registered PDD (version 11.2 dated: 05/02/2018)/14/, including the monitoring plan and the corresponding validation report.
- Desk review of the validation report MR /01/ and other relevant documents including documents related to the project activities in emission reductions.
- Review of the applied monitoring methodology (Technologies and Practices to Displace Decentralized Thermal Energy Consumption Version 3.0-July 2015/B01/
- On-site interview (13/05/2024 to 16/05/2024)
- Resolution of CARs and CLs raised during verification.
- Issuance of Verification Report.

The project activity was correctly implemented according to the selected monitoring methodology, monitoring plan and the registered PDD/14/. The monitoring system was installed, and maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. Through the document review and On-site interview, the verification team confirms that the project activity has resulted in 103,069tCO2e emission reductions during the 6th monitoring period ($2^{nd}$ crediting period).

This statement covers the verification period from 01/01/2023 to 31/12/2023(including both the dates).

The VVB has raised 03 clarifications and 07 corrective action requests, all of which are closed. Furthermore, VVB has not raised any Forward action request during this verification.

The VVB considers necessary to give reasonable assurance that reported GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology and the monitoring plan contained in the registered PDD/14/ are fairly stated.

The VVB, hereby certifies that the project activity, achieved emission reductions by sources of GHG equal to 103,069t$CO_2$e equivalent and all monitoring requirements have been fulfilled and is substantiated by an audit trail that contains evidence and records.

## 1. Abbreviations

| Abbreviations | Full texts |
|---|---|
| BE | Baseline Emissions |
| CP | Crediting Period |
| VER | Verified Emission Reduction |
| CAR | Corrective Action Request |
| CCIPL | Carbon Check (India) Private Ltd. |
| CDM | Clean Development Mechanism |
| CH4 | Methane |
| CL | Clarification Request |
| CO2 | Carbon Dioxide |
| CO2e | Carbon Dioxide Equivalent |
| DVR | Draft Verification Report |
| EF | Emission Factor |
| FAR | Forward Action Request |
| FVR | Final Verification Report |
| GHG | Greenhouse gas(es) |
| GWP | Global Warming Potential |
| IPCC | Intergovernmental Panel on Climate Change |
| LE | Leakage Emissions |
| MP | Monitoring Period |
| MR | Monitoring Report |
| MWh | Mega Watt Hour |
| OSV | On Site Visit |
| PP(s) | Project Participant(s) |
| PD | Project Developer |
| QC/QA | Quality Control/ Quality Assurance |
| TA | Technical Area |
| TR | Technical Review |
| UNFCCC | United Nations Framework Convention on Climate Change |
| VVS | Validation and Verification Standard |
| VVB | Validation & verification body |
| IR | Internal resource |
| KPT | Kitchen Performance Test |
| CWPs | Ceramic Water purifiers |
| HSE | Hydrological Social Enterprise |

## 2. Competence of team members and technical reviewers

# Carbon Check (India) Private Limited

## Certificate of Competency

### Mr. Harish Sharma

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

*for the following functions and requirements:*

| | | | |
|---|---|---|---|
| ☒ Validator | ☒ Verifier | ☒ Team Leader | ☒ Technical Expert |
| ☐ Technical Reviewer | ☐ Health Expert | ☐ Gender Expert | ☐ Plastic Waste Expert |
| ☐ CCB Expert | ☐ Legal Expert | ☒ Financial Expert | ☐ Environmental, Health and Safety financial matters |
| ☒ SDG+ | ☒ Social no-harm(S+) | ☒ Environment no-harm(E+) | |
| ☒ Local Expert for India | | | |

*in the following Technical Areas:*

| | | | | |
|---|---|---|---|---|
| ☒ TA 1.1 | ☒ TA 1.2 | ☐ TA 2.1 | ☒ TA 3.1 | ☐ TA 4.1 |
| ☐ TA 4. n | ☐ TA 5.1 | ☐ TA 5.2 | ☐ TA 7.1 | ☐ TA 8.1 |
| ☐ TA 9.1 | ☐ TA 9.2 | ☐ TA 10.1 | ☒ TA 13.1 | ☐ TA 13.2 |
| ☐ TA 14.1 | ☐ TA 15.1 | ☐ TA 16.1 | | |

**Issue Date**
**5th December 2023**

**Expiry Date**
**31st December 2024**

Priya Suman

Ms. Priya Suman
Compliance Officer

Sanjay Agarwalla

Mr. Sanjay Kumar Agarwalla
Technical Director

**Revision History of the document:**

| Revision date | Summary of changes |
|---|---|
| 2022 | Initial Adoption |
| Jan 2023 | Annual revision |
| Dec 2023 | Change in the template due to revision in TA and function |

CCIPL_FM 7.9 Certificate of Competency_V4.0_112023
[1] Please refer to previous version of FM 7.9 for the revision history

# Carbon Check (India) Private Limited

## Certificate of Competency

### Sorin Socheat

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

*for the following functions and requirements:*

| | | | |
|---|---|---|---|
| ☐ Validator | ☐ Verifier | ☐ Team Leader | ☐ Technical Expert |
| ☐ Technical Reviewer | ☐ Health Expert | ☐ Gender Expert | ☐ Plastic Waste Expert |
| ☐ CCB Expert | ☐ Legal Expert | ☐ Financial Expert | ☐ Environmental, Health and Safety financial matters |
| ☐ SDG+ | ☐ Social no-harm(S+) | ☐ Environment no-harm(E+) | |
| ☒ Local Expert for Cambodia | | | |

*in the following Technical Areas:*

| | | | | |
|---|---|---|---|---|
| ☐ TA 1.1 | ☐ TA 1.2 | ☐ TA 2.1 | ☐ TA 3.1 | ☐ TA 4.1 |
| ☐ TA 4. n | ☐ TA 5.1 | ☐ TA 5.2 | ☐ TA 7.1 | ☐ TA 8.1 |
| ☐ TA 9.1 | ☐ TA 9.2 | ☐ TA 10.1 | ☐ TA 13.1 | ☐ TA 13.2 |
| ☐ TA 14.1 | ☐ TA 15.1 | ☐ TA 16.1 | | |

**Issue Date**

**1st December 2023**

**Expiry Date**

**31st December 2024**

Priya Suman

Ms. Priya Suman
Compliance Officer

Sanjay Agarwalla

Mr. Sanjay Kumar Agarwalla
Technical Director

**Revision History of the document:**

| Revision date | Summary of changes |
|---|---|
| May 2023 | Initial Adoption |
| Dec 2023 | Template changes to include additional functions and TA |

CCIPL_FM 7.9 Certificate of Competency_V4.0_112023

[1] Please refer to previous version of FM 7.9 for the revision history

# Carbon Check (India) Private Limited

## Certificate of Competency

### Ms. Indumathi C

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

*for the following functions and requirements:*

| | | | |
|---|---|---|---|
| ☒ Validator | ☒ Verifier | ☒ Team Leader | ☒ Technical Expert |
| ☒ Technical Reviewer | ☐ Health Expert | ☐ Gender Expert | ☒ Plastic Waste Expert |
| ☐ CCB Expert | ☐ Legal Expert | ☒ Financial Expert | ☐ Environmental, Health and Safety financial matters |
| ☒ SDG+ | ☒ Social no-harm(S+) | ☒ Environment no-harm(E+) | |
| ☒ Local Expert for India and Sri Lanka | | | |

*in the following Technical Areas:*

| | | | | |
|---|---|---|---|---|
| ☒ TA 1.1 | ☒ TA 1.2 | ☐ TA 2.1 | ☒ TA 3.1 | ☐ TA 4.1 |
| ☐ TA 4. n | ☐ TA 5.1 | ☐ TA 5.2 | ☐ TA 7.1 | ☐ TA 8.1 |
| ☐ TA 9.1 | ☐ TA 9.2 | ☐ TA 10.1 | ☒ TA 13.1 | ☒ TA 13.2 |
| ☐ TA 14.1 | ☐ TA 15.1 | ☐ TA 16.1 | | |

**Issue Date**

**5th December 2023**

**Expiry Date**

**31st December 2024**

Priya Suman

**Ms. Priya Suman**
**Compliance Officer**

Sanjay Agarwalla

**Mr. Sanjay Kumar Agarwalla**
**Technical Director**

**Revision History of the document:**

| Revision date | Summary of changes |
|---|---|
| 2022[1] | Annual revision |
| Jan 2023 | Annual revision |
| Dec 2023 | Change in the template due to revision in TA and function |

CCIPL_FM 7.9 Certificate of Competency_V4.0_112023

[1] Please refer to previous version of FM 7.9 for the revision history

**3.** Documents reviewed or referenced.

| Ref no. | Reference Document |
|---|---|
| /01/ | HSE_CP2-MP6_GS1020MR_V2.4.0_dated 21/06/2024 |
| /02/ | HSE_CP2-MP6_GS1020ER_V.1.0_dated 03/05/2024 |
| /03/ | Survey lists. |
| /04/ | Monitoring report and Verification Report of previous verification |
| /05/ | Sales records database |
| /06/ | Projects Database |
| /07/ | Technical specification for CWPs |
| /08/ | Operational lifetime certificate. |
| /09/ | Training records: Enumerator Participant List and Photos and attendance sheet MP6- |
| /10/ | Maintenance cum grievance mechanism |
| /11/ | A Declaration against no legal contests/disputes andgrievances received during the current monitoring period |
| /12/ | Audit records: site visit evidence including site visit assessment notes, geo-coordinates, photographs. |
| /13/ | Contract signed between VVB and PP is on 02/04/2024 |
| /14/ | a) Registered PDD version 11.2 dated: 05/02/2018 |
| /14-B/ | b) PDD version 11.3 dated: 21/06/2024 |
| /15/ | Summary_report_LPG_Kiln_Installation |
| /16/ | HSE_CP2MP6_Hotline Tracking Record Jan-Dec_2023 |
| /17/ | HSE_CP2MP6_Replacement Report_Jan-Dec 2023 |
| /18/ | 2nd Crediting Period Validation Report |
| /19/ | Break-Even Price Analysis<br>a. Break Even Price Jan – Dec 2023<br>b. Break Even Price Jan – Dec 2023<br>c. Expense Summary Breakeven Jan – Dec 2023<br>d. Expense Summary Breakeven Jan – Dec 2022 |

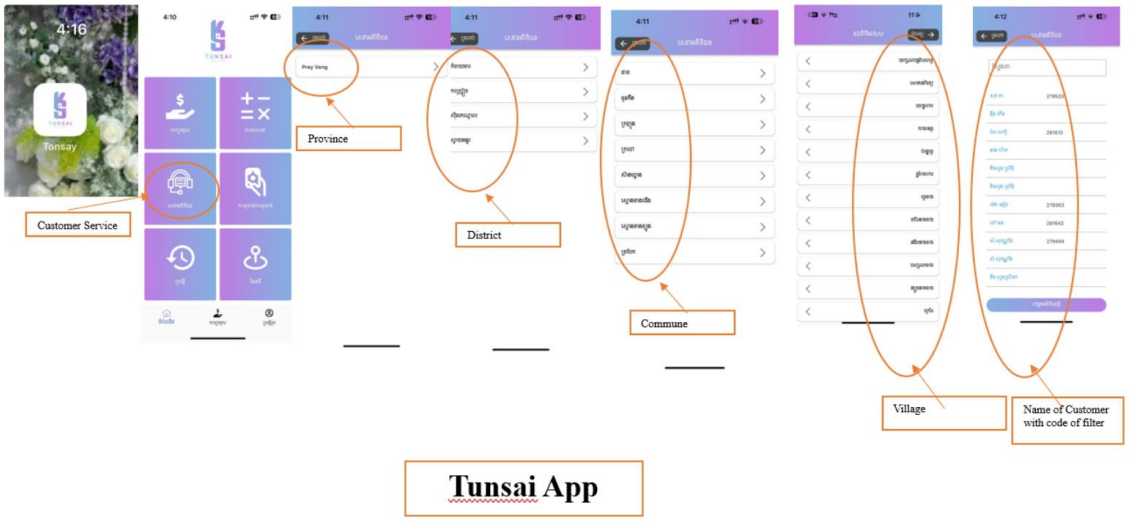
**Background Documents**

| Ref no. | Reference Document |
|---|---|
| /B01/ | Technologies and Practices to Displace Decentralized Thermal Energy Consumption Version 3.0-July 2015 |
| /B02/ | a. GS Principal and requirements v1.2 https://globalgoals.goldstandard.org/101-par-principles-requirements/<br>b. Community Services Activity Requirements v1.2 https://globalgoals.goldstandard.org/200-gs4gg-community-services-activity-requirements/<br>c. GS Validation and Verification standard v1.0 https://globalgoals.goldstandard.org/113-par-validation-and-verification-standard/<br>d. Site visit and Remote audit requirement v2.0 https://globalgoals.goldstandard.org/112_par_site-visit-and-remote-audit-requirements-and-procedures/<br>e. gold standard Stakeholder Consultation & Engagement Procedure,<br>f. Requirements & GS4GG-VCR-FORM Version 01.0<br>g. CDM Validation and verification standard for project activities version 03- CDM: Standards/Manuals (unfccc.int) |
| /B03/ | 1. Standard for sampling and surveys for CDM PAs and PoAs, version 09<br>2. CDM Guidelines for sampling and surveys for CDM project activities and program of activities (version 04.0). |

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

### Clarification Request (CLs)

**Table 01 : Clarification requests**

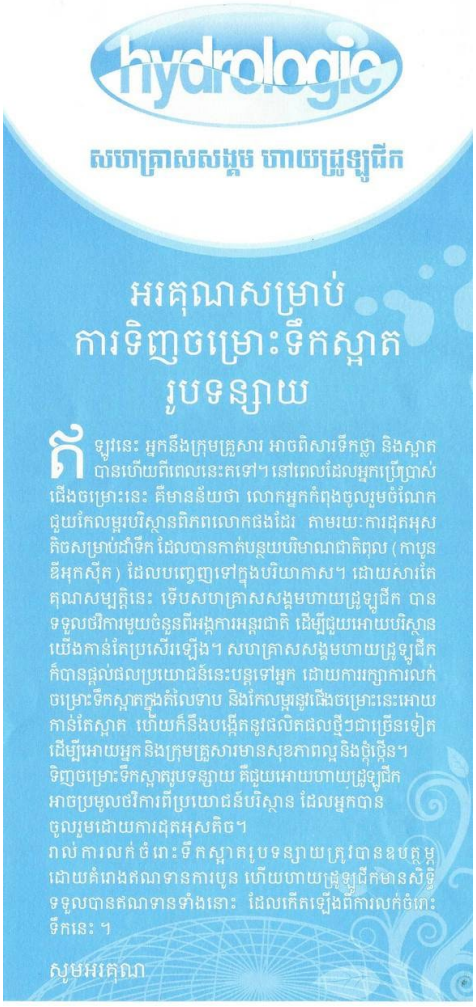
| CL ID | 01 | Section no. | B.1.1 | Date: 09/05/2024 |
|---|---|---|---|---|
| **Description of CL** | | | | |
| VVB reviewed the MR and found that the PP has addressed the FAR raised during third MP, however, it is not clear to the VVB that how the data ceramic filter replacement data is tracked and recorded. PP shall clarify the procedure in place to track the filter replacement and share the sample records. | | | | |
| **Project participant response** | | | | **Date: 24/05/2024** |
| The data ceramic filter replacement is tracked and recorded in Tunsai App by sale team as shown in the below screenshot. It should be noted that the sale team who are working on the ground could receive the information for pot replacement from two main channels: hotline channel and their own sale channel. The replacement can be free of charge if it is still under warranty period (2 years) otherwise, it is charged as spare part item.<br>  <br> | | | | |
| **Documentation provided by project participant** | | | | |
| *Record of replacement part* | | | | |
| **GS VVB assessment** | | | | **Date:** 28/05/2024 |
| The VVB acknowledges the clarification provided by the PP regarding the tracking and recording of ceramic filter replacement data. The explanation that the data is recorded in the Tunsai App by the sales team, along with the provided screenshot, is satisfactory. The process of receiving replacement information through the hotline and sales channels is well-documented.<br>Based on the provided evidence, explanation and OSV observation, the VVB considers the clarification adequately addressed and closed. | | | | |

| CL ID | 02 | Section no. | B.2.4 | Date: 09/05/2024 |
|---|---|---|---|---|
| **Description of CL** | | | | |
| PP shall clarify the significant differences between the leakages in the MP5 (2,731 tCO2e.) as compared to this MP6 which is 0 tCO2e. | | | | |
| **Project participant response** | | | | **Date: 24/May/2024** |
| The amount of leakages in the MP5 was calculated based on the amount of firewood burned at the factory to produce ceramic water filter pot. However, in this MP6, PP has switched from wood burning Kiln to LPG burning Kiln. At the factory for this MP6, diesel and LPG consumption were recorded and the amount of emission was estimated to be 71.24 tCO2e (0.069% of the total emission) which is minimal and can be negligible based on the methodology TPDDTEC 3.0, page 32. The detail calculation can be found in ER calculation sheet, tab Leakage. | | | | |
| **Documentation provided by project participant** | | | | |
| *-ER calculation sheet*<br>*- Record of LPG and Diesel use in MP6 at the factory* | | | | |

| GS VVB assessment | Date: 30/05/2024 |
|---|---|
| VVB reviewed the response and documents provided by the PP and found that during the current monitoring period the PP has changed the Kiln from wood to LPG fired one. This is a permanent Change from the design certified monitoring plan however, same is not reflected in section B.2.4 and B.2.5 of the MR. Furthermore, in MR, PP has mentioned that the LPG fired Kiln started its operation in January 2022, however, no commissioning and installation certificate is provided for the VVB's review.<br>CL is open. | |
| **Project participant response** | **Date: 30/05/2024** |
| PP has revised **section B.2.4** of MR as *"In this MP6, there is a permanence change of the sources of leakage in the registered PDD in which PP used firewood to fuel the kilns to fire the ceramic pots. From this MP, PP has switched from wood to LPG to fuel the kiln to fire the ceramic pots. It should be noted that this fuel switch is done as part of Hydrologic improvement at production line for better working environment as well as reducing GHG emission at the production line. The preparation and installation of the kiln was completed within January 2023 as shown in the summary report of the LPG Kiln installation".*<br>*PP also has revised* **section B.2.5** of MR as *"Since PP switch from wood to LPG fired kiln, PP will continue to monitor and record the amount of LPG use to fire the ceramic pots and the detail of calculation of GHG emission from burning LPG is calculated in ER calculation sheet"* as shown in the revised MR.<br>Please refer to the summary report of the LPG kiln installation as attached file. | |
| **Documentation provided by project participant** | |
| Summary report of the LPG kiln installation | |
| **GS VVB assessment** | **Date:** 31/05/2024 |
| VVB has checked the revised MR and the supporting documents and found that the updates to sections B.2.4 and B.2.5 of the MR are consistent with the permanent Change from the originally certified monitoring plan. These revisions ensure the MR accurately reflects the current operational practices and their environmental impact. The summary report along with its annexures provided by the PP satisfactorily documents the commissioning and installation of the LPG kiln, aligning with the details mentioned in the MR.<br>Based on the revised MR and the supporting documentation provided by the PP, the VVB concludes that the clarification request has been adequately addressed. The revisions have been appropriately incorporated into the MR, and the necessary evidence has been reviewed and accepted.<br>Therefore, the clarification request has been closed. | |

| CL ID | 03 | Section no. | onsite findings | Date: 16/05/2024 |
|---|---|---|---|---|
| **Description of CL** | | | | |
| During onsite interviews, VVB found some of the stakeholders denied signing Carbon right transfer form, PP shall clarify. | | | | |
| **Project participant response** | | | | **Date: 24/05/2024** |

This might be a confusion as PP has never asked stakeholder to sign carbon right transfer form but PP has notify them with a written thank you note *"All Tunsai water filter sales are supported by carbon finance and Hydrologic retains the right to all carbon credits arising from the use of the Tunsai water filter"* that come with a package when user purchases any filter unit, as seen below.
Furthermore, this is also in line with the registered PDD (page 12) *"PP clearly communicated to the stakeholder that PP will claim ownership rights at the stakeholder consultation. In addition, PP is including a document in every water filter sold that explains that PP retains the rights of ownership of the GHG reductions".*




| **Documentation provided by project participant** | |
|---|---|
| *Thank you note* | |
| **GS VVB assessment** | **Date:** 28/05/2024 |
| The VVB has reviewed the clarification provided by the PP regarding the issue of signing the Carbon Right Transfer Form. The PP has explained that instead, stakeholders are notified via a written thank you note included with each Tunsai water filter purchase, stating, "All Tunsai water filter sales are supported by carbon finance and Hydrologic retains the right to all carbon credits arising from the use of the Tunsai water filter."<br>Furthermore, this practice aligns with the information outlined in the registered PDD, which states that the PP clearly communicated the claim of ownership rights during stakeholder consultation and includes documentation with each water filter sold explaining that the PP retains the rights of ownership of the GHG reductions.<br>Based on the provided evidence, the alignment with the registered PDD and already documented procedure, the VVB considers this query adequately addressed and closed. | |

**Corrective Action required (CARs)**

**Table 2. CARs from this verification**

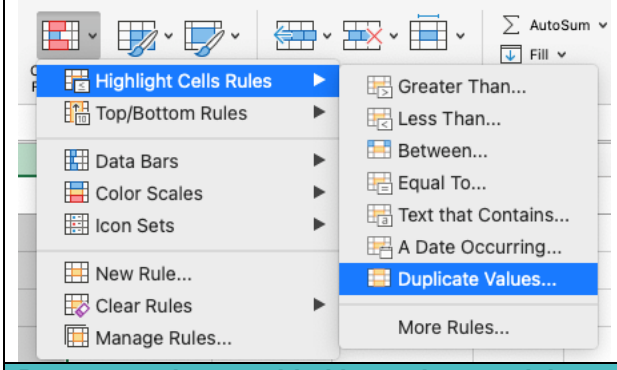
| **CAR ID** | **01** | **Section no.** | **Applicable throughout the MR** | **Date: 09/05/2024** |
|---|---|---|---|---|
| **Description of CAR** | | | | |

| |
|---|
| PP shall check and revised the formatting of MR, VVB found the multiples font used at the front page of the MR. As per template guide “Complete this form using the same format without modifying its font, headings or logo, and without any other alteration to the form.” |
| **Project participant response** **Date:** 24/05/2024 |
| PD has revised the MR format to its original. |
| **Documentation provided by project participant** |
| *Revised MR* |
| **GS VVB assessment** **Date:** 28/05/2024 |
| The VVB has reviewed the updated Monitoring Report (MR) and confirms that the PP has revised the formatting to adhere to the template guidelines. The front page and other sections of the MR now consistently use the same font, headings, and logo as required, with no alterations to the form.<br><br>Based on this review, the VVB considers this CAR adequately addressed and closed. |

| | | | | |
|---|---|---|---|---|
| **CAR ID** | **02** | **Section no.** | **Table 1** | **Date: 09/05/2024** |
| **Description of CAR** | | | | |
| PP shall correct the unit/products of SDG 13 presented in the table 1 of the MR. | | | | |
| **Project participant response** | | | | **Date:** 24/05/2024 |
| PP has revised the unit/products of SDG 13 in the table 1 of the MR | | | | |
| **Documentation provided by project participant** | | | | |
| *Revised MR* | | | | |
| **GS VVB assessment** | | | | **Date:** 29/05/2024 |
| The VVB has reviewed the updates in the revised MR and found that the table 1 has now been revised for the relevant units/product of SDG 13. CAR is closed. | | | | |

| | | | | |
|---|---|---|---|---|
| **CAR ID** | **03** | **Section no.** | **Applicable throughout MR** | **Date: 09/05/2024** |
| **Description of CAR** | | | | |
| VVB observe some table and pictures have no unique ID representations. PP shall check the and update it throughout the MR in accordance with template guideline. | | | | |
| **Project participant response** | | | | **Date:** 24/05/2024 |
| PP has added those unique ID as seen in the revised MR. | | | | |
| **Documentation provided by project participant** | | | | |
| Revised MR | | | | |
| **GS VVB assessment** | | | | **Date:** 28/05/2024 |
| The VVB has reviewed the revised MR and confirms that the PP has addressed the issue of missing unique ID representations for tables and pictures. The MR has been updated in accordance with the template guidelines. CAR is adequately addressed and closed. | | | | |

| | | | | |
|---|---|---|---|---|
| **CAR ID** | **04** | **Section no.** | **B.1.1** | **Date: 09/05/2024** |
| **Description of CAR** | | | | |
| VVB reviewed the MR, training documents and found that the PP has addressed the FAR raised for the data duplication during 5th MP, however, PP shall submit the attendance records, training photographs, and list of employees trained on the subject for avoidance of duplicate entry of the records. Further, PP shall elaborate the specific record for which measure has been taken in the worksheet for the automated checking column to alert if the information is duplicated. | | | | |
| **Project participant response** | | | | **Date:** 24/05/2024 |
| The minute of the refreshing training on data duplication is submitted. To set an automatically check if the name of users in the project database are duplicated or not, PP has combined the name of user with their address (village and commune) as a unique ID of each user. Then, a function of “conditional formatting of Microsoft Excel” is used to track duplicated cells. Please refer to “column M of the attached project database for the detail formula. | | | | |




| **Documentation provided by project participant** |
|---|
| - *Minute of the refreshing training*<br>- *Project database* |

| **GS VVB assessment** | **Date:** 29/05/2024 |
|---|---|
| PP has now submitted the training photographs, and records. Also, PP has provided the project database filtering the duplicate entry of the records by same name, village and commune. This arrangement ensures that no duplicate entry is present in the database.<br>Based on review of documents and database, the VVB considers this CAR adequately addressed and closed. | |

| **CAR ID** | **05** | **Section no.** | **E.5** | **Date: 09/05/2024** |
|---|---|---|---|---|
| **Description of CAR** | | | | |
| VVB assessed and found that table provided in section E.5 of the MR is not in compliance with the template guide of the MR. PP shall update the table as per the relevant table template prescribed in the MR Template Guide. | | | | |
| **Project participant response** | | | | **Date:** 24/05/2024 |
| PP has adjusted the table to fit with the templated guid as ween in the revised MR. | | | | |
| **Documentation provided by project participant** | | | | |
| Revised MR. | | | | |
| **GS VVB assessment** | | | | **Date:** 29/05/2024 |
| VVB assessed and found that table provided in section E.5 of the MR is now made consistent with the template guide of the MR. CAR is closed. | | | | |

| **CAR ID** | **06** | **Section no.** | **G.2** | **Date: 09/05/2024** |
|---|---|---|---|---|
| **Description of CAR** | | | | |
| It is represented that 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. PP shall demonstrate through verifiable documentary evidence that the project still required the carbon credit revenue to sustain the project. | | | | |
| **Project participant response** | | | | **Date:** 24/05/2024 |
| PP wish to clarify that this requirement is not for financial additionality. It was being reported during the stakeholder consultation stage where there was a request for not selling CPW at a higher price. To address this request, PP calculate the price of CWP based on break-even price + 10% markup.<br>For this monitoring period, there is no significant change in terms of average selling price compared to the previous MP (CP2-MP5) being 34.70$ and 34.54$ respectively. | | | | |
| **Documentation provided by project participant** | | | | |
| - Break even calculation sheet (MP6, MP5)<br>- Break even price (MP6, MP5)<br>- Sample of Sale receipts | | | | |
| **GS VVB assessment** | | | | **Date:** 29/05/2024 |
| PP Clarified and VVB assessed that the project has been certified additional based on first of its kind project and the financial additionality hasn't been opted by the PP during design certification. The purpose of the break-even analyses submitted by the PP is to address the stakeholder concern raised during stakeholder consultation stage that the price should not be kept high to increase the profit margin. VVB has reviewed the sale receipt of the different CWPs and found that the weighted average of the selling price remained almost same.<br>Based on review of previous and current year breakeven worksheets, sales database and sales receipts, the VVB considers this CAR adequately addressed and closed. | | | | |

| **CAR ID** | 07 | **Section no.** | | **Date:** 09/05/2024 |
|---|---|---|---|---|
| **Description of CAR** | | | | |

| | |
|---|---|
| PP has represented that during this monitoring, PP has not purchased clay because they have enough stock from its previous purchase in 2018 from a nearby licensed brick factory. PP shall provide the tabulated information of annual inventory and consumption data and shall furnish the inventory records to verify the data. | |
| **Project participant response** | **Date:** 24/05/2024 |
| PP has provided the inventory of the clay use as attached file. | |
| **Documentation provided by project participant** | |
| *Clay inventory* | |
| **GS VVB assessment** | **Date:** 29/05/2024 |
| The VVB has reviewed the provided information of the annual inventory and consumption data for the clay use from the inventory records. The documentation confirms the sufficient stock from the previous purchase in 2018 from a nearby licensed brick factory. Furthermore, during OSV the VVB has witnessed the clay stock. Based on the records provided by VVB and OSV observation, the VVB considers CAR adequately addressed and closed. | |

**Annex 1: Data and parameters fixed ex-ante at renewal of crediting period.**

| | |
|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | fNRB, y (Non-renewable biomass ratio) |
| **Data unit** | % |
| **Default values used** | 95.01 |
| **Purpose of data** | Calculation of baseline and project emissions |
| **Source of verification of the source** | Biomass Non-Renewability Assessment Cambodia[6] |

| | |
|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | ʃff,b,y (Fraction of non-renewable fuel for fossil fuels (LPG)) |
| **Data unit** | Percentage |
| **Default values used** | 100% |
| **Purpose of data** | Calculation of baseline and project emission |
| **Source of verification of the source** | approved methodology /B01/ |

| | |
|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | $NCV_{b,wood}$ / $NCV_{p,wood}$ (Net calorific value of the fuels used in baseline/ project scenario) |
| **Data unit** | TJ/ton |
| **Default values used** | 0.015 |
| **Purpose of data** | Baseline /project Emission calculation |
| **Source of verification of the source** | IPCC Guidelines for National Greenhouse Gas Inventories", Volume 2, Energy, Chapter 1, Introduction, Table 1.2, p1.19. |

| | |
|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | $NCV_{b,LPG}$ / $NCV_{p,LPG}$ (Net calorific value of the fuels used (LPG) in baseline/ project scenario) |
| **Data unit** | TJ/ton |
| **Default values used** | 0.047 |
| **Purpose of data** | Baseline /project Emission calculation |
| **Source of verification of the source** | IPCC (2006) "IPCC Guidelines for National Greenhouse Gas Inventories", Volume 2, Energy, Chapter 1, Introduction, Table 1.2, p 1.18. |

[6] Please refer to $f_{NRB}$ assessment Cambodia and its calculation sheet (2021) from project GS751.

| | |
|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | Wood to charcoal conversion factor |
| **Data unit** | factor |
| **Default values used** | 6 |
| **Purpose of data** | Baseline/project Emission calculation |
| **Source of verification of the source** | approved methodology /B01/ |

| | |
|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | $EF_{b,wood,CO2}$ / $EF_{p,wood,CO2}$ ($CO_2$ emission factor arising from use of fuels (wood) in baseline/project scenario) |
| **Data unit** | $tCO_{2e}/TJ$ |
| **Default values used** | 112.00 |
| **Purpose of data** | Baseline/Project emission calculation |
| **Source of verification of the source** | IPCC Guidelines for National Greenhouse Gas Inventories", Volume 2, Energy, Chapter 2, Stationary Combustion, Table 2.5 |

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|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | $EF_{b,wood,nonCO2}$ / $EF_{p,wood,nonCO2}$ (non-CO2 emission factor arising from use of fuels (wood) in baseline/project scenario) |
| **Data unit** | $tCO_{2e}/TJ$ |
| **Default values used** | **9.46**<br>= (Wood Emission Conversion Factor $CH_4$ * Global Warming Potential Equivalency of $CH_4$) + (Wood Emission Conversion Factor $N_2O$ * Global Warming Potential Equivalency of $N_2O$)<br>= (0.3 $tCO_2e/TJ$ *28) + (0.004 $tCO_2e/TJ$ *265) = 9.46$tCO_2e/TJ$ |
| **Purpose of data** | Baseline/ project emission calculation |
| **Source of verification of the source** | - For wood emission $CH4/N_2O$: IPCC Guidelines for National Greenhouse Gas Inventories", Volume 2, Energy, Chapter 2, Stationary Combustion, Table 2.5<br>- For GWP: RULE UPDATE dated on 03/06/2021: Applicability of global warming potential for gold standard for the global goals project based on AR5. |

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|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | $EF_{b,LPG,CO2}$ / $EF_{p,LPG,CO2}$ ($CO_2$ emission factor arising from use of |

| | |
|---|---|
| | fuels (LPG) in baseline/project scenario) |
| **Data unit** | $tCO_2/TJ$ |
| **Default values used** | **63.1** |
| **Purpose of data** | Baseline/project emission calculation |
| **Source of verification of the source** | IPCC (2006) "IPCC Guidelines for National Greenhouse Gas Inventories", Volume 2, Energy, Chapter 2, Stationary Combustion, Table 2.5. |

| | |
|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | $EF_{b,\ LPG,nonCO2}$ / $EF_{p,LPG,nonCO2}$ (Non-CO2 emission factor arising from use of fuels (LPG) in baseline/project scenario) |
| **Data unit** | $tCO_2/TJ$ |
| **Default values used** | **0.1665** (($CH_4$=0.005 $tCO_2e$/TJ *GWP 28) + ($N_2O$=0.0001 $tCO_2e$/TJ *GWP 265)<br>This value is minimal which is negligible in the ER calculation. As a result, it is set to zero in the ER calculation for simplicity. |
| **Purpose of data** | Baseline/project emission calculation |
| **Source of verification of the source** | IPCC (2006) "IPCC Guidelines for National Greenhouse Gas Inventories", Volume 2, Energy, Chapter 2, Stationary Combustion, Table 2.5 |

| | |
|---|---|
| **Relevant SDG Indicator** | 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 |
| **Data/parameter** | $X_{boil}$ (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) |
| **Data unit** | % |
| **Default values used** | 5.80 |
| **Purpose of data** | Baseline /project emission calculation |
| **Source of verification of the source** | Baseline report and $C_j$ & $X_{boil}$ calculation sheet (Please refer HSE_CP2_$C_j$&$X_{boil}$_20171023). |

| | |
|---|---|
| **Relevant SDG Indicator** | 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 |
| **Data/parameter** | $C_j$ |
| **Data unit** | % |
| **Default values used** | 0.26 |
| **Purpose of data** | For calculating baseline and project emission |
| **Source of verification of the source** | Baseline report and $C_j$ & $X_{boil}$ calculation sheet (Please refer HSE_CP2_Cj&Xboil_20171023). |

| | |
|---|---|
| **Relevant SDG Indicator** | 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. |

| | |
|---|---|
| **Data/parameter** | - $W_{b,y,TRAD,wood}$ (Quantity of wood required to treat 1 litre of water using traditional stoves in bseline scenario)<br>- $W_{p,y,TRAD,wood}$ (Quantity of wood required to treat 1 litre of water using traditional stoves in project scenario) |
| **Data unit** | grams/liter |
| **Default values used** | - 300.38<br>- 300.38 |
| **Purpose of data** | Baseline/ Project emission calculations |
| **Source of verification of the source** | HSE(2019)_MonitoringSurvey_V6Final,Table 54 |

| | |
|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | - $W_{b,y,TRAD,charcoal}$ (Charcoal required to treat 1 litre of water using traditional stoves in baseline scenario)<br>- $W_{p,y,TRAD,charcoal}$ (Charcoal required to treat 1 litre of water using traditional stoves in project scenario) |
| **Data unit** | grams/liter |
| **Default values used** | - 125.00 (capped value)<br>- 125.00 (capped value) |
| **Purpose of data** | For calculating baseline and project emission |
| **Source of verification of the source** | HSE (2019) MonitoringSurvey_V6Final, Table 54 |

| | |
|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | - $W_{b,y,IMP,Wood}$ (Wood required to treat 1 litre of water using improved cook stove in baseline scenario)<br>- $W_{p,y,IMP,Wood}$ (Wood required to treat 1 litre of water using improved cook stove in project scenario) |
| **Data unit** | grams/liter |
| **Default values used** | - 357.7<br>- 357.7 |
| **Purpose of data** | For calculating baseline and project emission |
| **Source of verification of the source** | HSE (2019) MonitoringSurvey_V6Final, Table 54 |

| | |
|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | - $W_{b,y,IMP,Charcoal}$ (Charcoal required to treat 1 litre of water using improved cook stove in baseline scenario)<br>- $W_{p,y,IMP,Charcoal}$ (Charcoal required to treat 1 litre of water using improved cook stove in project scenario) |
| **Data unit** | grams/liter |
| **Default values used** | - 125.00 (Capped value)<br>- 125.00 (Capped value) |

| | |
|---|---|
| **Purpose of data** | For calculating baseline and project emission |
| **Source of verification of the source** | HSE (2019)_MonitoringSurvey_V6Final,Table 54 |

| | |
|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | - $W_{b,y,LPG(small)}$ (LPG required to treat 1 litre of water using LPG stove (small) in baseline scenario)<br>- $W_{p,y,LPG(small)}$ (LPG required to treat 1 litre of water using LPG stove (small) in project scenario) |
| **Data unit** | grams/liter |
| **Default values used** | - 30.00 (capped value)<br>- 30.00 (capped value) |
| **Purpose of data** | For calculating baseline and project emission |
| **Source of verification of the source** | HSE(2019)_MonitoringSurvey_V6Final,Table 54 and Rule Update |

| | |
|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | - $W_{b,y,LPG(Large)}$ (LPG required to treat 1 litre of water using LPG stove (large) in baseline scenario)<br>- $W_{p,y,LPG(Large)}$ (LPG required to treat 1 litre of water using LPG stove (large) in project scenario) |
| **Data unit** | grams/liter |
| **Default values used** | - 15.11<br>- 15.11 |
| **Purpose of data** | For calculating baseline and project emission |
| **Source of verification of the source** | HSE(2019)_MonitoringSurvey_V6Final,Table 54 and Rule Update |

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|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | $W_{b,y,WEIGHTED,wood}$ |
| **Data unit** | grams/liter |
| **Default values used** | 0.000211 |
| **Purpose of data** | For calculating baseline and project emission |
| **Source of verification of the source** | Rule Update -Application of TPDDTEC methodology to SAFE Water Supply projects dated on 30/06/2022; Baseline fuel mix and calculation. |

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|---|---|
| **Relevant SDG Indicator** | 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 |
| **Data/parameter** | % of Traditional Stove Users with wood in the baseline |
| **Data unit** | % |

| | |
|---|---|
| **Default values used** | 56.93 |
| **Purpose of data** | Baseline emission calculations |
| **Source of verification of the source** | - Baseline study<br>- HSECP2_Baseline Stove-Fuel Mix Simplification20170921, Tab Final table ER Calc, Cell D7 |

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|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | Net benefits of SDG15 (Area of forest Save ) |
| **Data unit** | Hectare |
| **Default values used** | 354 |
| **Purpose of data** | To estimate SDG15 contribution |
| **Source of verification of the source** | Calculated, ER spreadsheet, Tab: Nexus_Summary, cell AT12 |

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|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | % of large $LPG_{stove\ usage\ in\ baseline\ scenario}$ (Percentage of large LPG stove usage in baseline scenario) |
| **Data unit** | % |
| **Default values used** | 56 |
| **Purpose of data** | Baseline emission calculations |
| **Source of verification of the source** | HSE(2019)_MonitoringSurvey_V6Final, page 37 |

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|---|---|
| **Relevant SDG Indicator** | SDG15.1.1 Forest area as a proportion of total land area. |
| **Data/parameter** | Growth stock in forest (Growth stock in forest in Cambodia) |
| **Data unit** | Tonne/Hectare |
| **Default values used** | 162.15 |
| **Purpose of data** | Baseline and project emission calculations |
| **Source of verification of the source** | - Cambodia growing stock (94$m^3$/ha): Global Forest Resources Assessment 2015, Page 79, Table 13 Growing stock in forest and other wooded land 2015.<br>- Converting factor from $m^3$ of wood to tonne (1.725 tonne/$m^3$): Chapter 3: LUCF sector Good Practice Guidance IPCC 2006, page 12 |

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|---|---|
| **Relevant SDG Indicator** | 15.1.1 Forest area as a proportion of total land area. The area of forest save is monitored indicator. |
| **Data/parameter** | Net benefits of SDG15 |
| **Data unit** | Hectare |
| **Default values used** | 354 |
| **Purpose of data** | To estimate SDG15 contribution |
| **Source of verification of the source** | Calculated, ER spreadsheet, Tab: Nexus_Summary, cell AT12 |

| | |
|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | % of Improved Stove Users with wood in the baseline |
| **Data unit** | % |
| **Default values used** | 11.26 |
| **Purpose of data** | Baseline emission calculations |
| **Source of verification of the source** | - Baseline study<br>- HSECP2_Baseline Stove-Fuel Mix Simplification20170921, Tab Final table ER Calc, Cell D7 |

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|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | $W_{b,y,WEIGHTED,charcoal}$ (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) |
| **Data unit** | % |
| **Default values used** | 0.000008 |
| **Purpose of data** | Baseline and project emission calculations |
| **Source of verification of the source** | Default value based on Rule Update -Application of TPDDTEC methodology to SAFE Water Supply projects dated on 03/05/2021 and Baseline fuel mix |

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|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | % of Traditional Stove Users with charcoal in the baseline |
| **Data unit** | % |
| **Default values used** | 5.19 |
| **Purpose of data** | Baseline emission calculations |
| **Source of verification of the source** | - Baseline study<br>- HSECP2_Baseline Stove-Fuel Mix Simplification20170921, Tab Final table ER Calc, Cell D7 |

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|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | $W_{b,y,WEIGHTED,LPG}$ (Average weighted quantity of LPG required to treat 1 litre of water using technologies representative of baseline scenario b during project year y) |
| **Data unit** | Tonnes |
| **Default values used** | 0.0000043 |
| **Purpose of data** | Baseline emission calculations |
| **Source of verification of the source** | Rule Update as mentioned above and Baseline fuel mix |

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|---|---|
| **Relevant SDG Indicator** | 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 |
| **Data/parameter** | % of Improved Stove Users with charcoal in the baseline |
| **Data unit** | % |
| **Default values used** | 0.87 |
| **Purpose of data** | Baseline emission calculations |
| **Source of verification of the source** | - Baseline study<br>- HSECP2_Baseline Stove-Fuel Mix Simplification20170921, Tab Final table ER Calc, Cell D7 |

| | |
|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | % of LPG stove usage in the baseline scenario |
| **Data unit** | % |
| **Default values used** | 19.91 |
| **Purpose of data** | Baseline emission calculations |
| **Source of verification of the source** | - Baseline study<br>- HSECP2_Baseline Stove-Fuel Mix Simplification20170921, Tab Final table ER Calc, Cell D7 |

| | |
|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | *% of small LPG$_{stove\ usage\ in\ baseline\ scenario\ (}$*Percentage of small LPG stove usage in baseline scenario$_{)}$ |
| **Data unit** | % |
| **Default values used** | 44 |
| **Purpose of data** | Baseline emission calculations |
| **Source of verification of the source** | - HSE (2019) _MonitoringSurvey_V6Final, page 37 |

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|---|---|
| **Relevant SDG Indicator** | 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. |
| **Data/parameter** | % of large LPG$_{stove\ usage\ in\ baseline\ scenario\ (}$Percentage of large LPG stove usage in baseline scenario$_{)}$ |
| **Data unit** | % |
| **Default values used** | 56 |
| **Purpose of data** | Baseline emission calculations |
| **Source of verification of the source** | HSE (2019) _MonitoringSurvey_V6Final, page 37 |

**Annex 2: Assessment of data and parameters monitored**.

| Monitoring Parameter Requirement | Assessment/ Observation by the VVB |
|---|---|
| Relevant SDG Indicator | - 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.<br>- 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. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | $T_{p,y}$ (Total Distributed water purifier (CWP) units |
| Measuring frequency/Time Interval: | Monthly |
| Reported value & Unit: | - 26,252 units (number of units sold during CP2-MP6 )<br>- 554,586 units (cumulative units sold up to 31 Dec 2023)<br>- 156,797 units (cumulatively credited units over CP2-MP6) |
| Verified Source of Data | - Unit sold during this CP2-MP6: Sales Records<br>- Cumulative units sold up to 31 Dec 2023: ER spread sheet “tab Units_month, sum (E6:E162)”<br>- Cumulatively credited units over CP2-MP6 “ER spread sheet, tab Units_month, cell H162” |
| Is measuring and reporting frequency inaccordance with the monitoring plan and monitoring methodology? (Yes / No) | Yes, refer assessment above. |
| Assessment of details of monitoringequipment, its specification, and calibration as per the requirements of registered PDD: | N/A |
| Does the data management (from datageneration to emission reduction calculation)ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| Monitoring Parameter Requirement | Assessment/ Observation by the VVB |
|---|---|

| | |
|---|---|
| Relevant SDG Indicator | - 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.<br>- 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.<br>- - 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 |
| Data / Parameter:<br>(as in monitoring plan of PDD): | $U_{p,y}$ (Weighted average usage rate) |
| Measuring frequency/Time Interval: | Annually |
| Reported value & Unit: | 81.65 % |
| Verified Source of Data | Monitoring survey report and ER spread sheet tab “Usage Rate Calc, cell U12”. |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Yes, refer assessment above. |
| Assessment of details of monitoring equipment, its specification and calibrationas per the requirements of registered PDD: | N/A |
| Does the data management (from datageneration to emission reduction calculation)ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
|---|---|
| Relevant SDG Indicator | - 3.9.1 Mortality rate attributed to household and ambient air pollution. The number of people who notice less smoke in the kitchen after having water filter is the monitored parameter.<br>- 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.<br>- - 13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary, and tertiary curricula. |

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|---|---|
| | The total amount of emission reduction is the monitored parameter |
| Data / Parameter:<br>(as in monitoring plan of PDD): | $WQ_{Passed,y}$ (Water quality passing rate of water quality standard (WHO standard) per year) |
| Measuring frequency/Time Interval: | Annually |
| Reported value & Unit: | 93.33 % |
| Verified Source of Data | Water Quality test results |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Yes, refer assessment above. |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | N/A |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
|---|---|
| Relevant SDG Indicator | - 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.<br>- 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.<br>- - 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 |
| Data / Parameter:<br>(as in monitoring plan of PDD): | Hygiene Campaigns (Number of people attends the meeting in which Hygiene issue were explained) |
| Measuring frequency/Time Interval: | Annually |
| Reported value & Unit: | 74,079 |
| Verified Source of Data | Record from meetings “HSE-CP2MP6_Hygiene_Campaign” |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Yes, refer assessment above. |
| Assessment of details of monitoring equipment, its specification and calibrationas per the requirements of registered PDD: | NA |

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| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
|---|---|
| Relevant SDG Indicator | - 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.<br>- 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.<br>- 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. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | **Life Span,** The operating lifetime of the project device. The life span should be reported in cases where the PPs are opting to account the efficiency loss as per paragraph 32. |
| Measuring frequency/Time Interval: | Before first verification of each crediting period and every two years for the sequential monitoring period |
| Reported value & Unit: | 1,507.45 |
| Verified Source of Data | Water Consumption Field Test (WCFT) |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Yes, refer assessment above. |
| Assessment of details of monitoring equipment, its specification and calibrationas per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption<br>theoretically possible been applied or has a request for Change been approved? | NA |

| Monitoring Parameter Requirement | Assessment/ Observation by the VVB |
|---|---|
| Relevant SDG Indicator | - 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.<br>- 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.<br>- 15.1.1 Forest area as a proportion of total land area. Area of forest save is the monitored parameter. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | $Q_{p,y}$ (Quantity of purified water consumed in the project scenario p per person per day) |
| Measuring frequency/Time Interval: | Before first verification of each crediting period and every two years for the sequential monitoring period |
| Reported value & Unit: | 1.74 Liters/person/day |
| Verified Source of Data | Water Consumption Field Test (WCFT) |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption.<br>theoretically possible been applied or has a request for Change been approved? | NA |

| Monitoring Parameter Requirement | Assessment/ Observation by the VVB |
|---|---|
| Relevant SDG Indicator | - 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.<br>- 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 |

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|---|---|
| | parameter.<br>- - 15.1.1 Forest area as a proportion of total land area. Area of forest save is the monitored parameter. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | $Q_{p,rawboil,y}$ (The raw or unsafe water that is still boiled after installation of the CWP) |
| Measuring frequency/Time Interval: | Before first verification of each crediting period and every two years for the sequential monitoring period |
| Reported value & Unit: | 0.60 |
| Verified Source of Data | Water Consumption Field Test (WCFT) |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibrationas per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary |
| ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | QA/QC processes are in place. |
| In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
|---|---|
| Relevant SDG Indicator | - 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.<br>- 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.<br>- 15.1.1 Forest area as a proportion of total land area. Area of forest save is the monitored parameter. |

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| Data / Parameter:<br>(as in monitoring plan of PDD): | $Q_{p,cleanboil,y}$ (Quantity of safe water (treated or from safe supply) boiled in the project scenario p, after installation of the CWP) |
| Measuring frequency/Time Interval: | Before first verification of each crediting period and every two years for the sequential monitoring period. |
| Reported value & Unit: | 0.04 |
| Verified Source of Data | Water Consumption Field Test (WCFT) |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | This value is calculated by Multiplying the Total Number of stoves assumed to be distributed in the Project over the Crediting Period by the Usage rate per year |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure the correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption<br>theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
|---|---|
| Relevant SDG Indicator | 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. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | Women%_HH (Average percentage of women and girls per household who use CWP) |
| Measuring frequency/Time Interval: | Annually |
| Reported value & Unit: | 52.78 |
| Verified Source of Data | Monitoring survey “HSE_CP2-MP6_2023_US-PS_V3.0, Table 5” |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |

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| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
|---|---|
| Relevant SDG Indicator | 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. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | Average percentage of women and girls responsible for water boiling and collecting/purchasing cooking fuel before having CWPs |
| Measuring frequency/Time Interval: | Annually |
| Reported value & Unit: | 73.16 |
| Verified Source of Data | Monitoring survey "HSE_CP2-MP6_2024_US-PS_V3.0, Table 19&20" |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
|---|---|
| Relevant SDG Indicator | 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 |
| Data / Parameter:<br>(as in monitoring plan of PDD): | $N_{Less\_smoke,\ y}$ (% of households notice that their kitchen is less smoke) |
| Measuring frequency/Time Interval: | Annually |
| Value(s) of monitored parameter | 100 |
| Verified Source of Data | Monitoring survey "HSE_CP2-MP6_2024_US-PS_V3.0, Table |

| | |
|---|---|
| | 29” |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
|---|---|
| Relevant SDG Indicator | - 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.<br>- 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.<br>- 15.1.1 Forest area as a proportion of total land area. Area of forest save is the monitored parameter. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | % of Traditional Stove Users with wood in the project scenario (Percentage of Traditional Stove Users with wood in the project scenario) |
| Measuring frequency/Time Interval: | Annually |
| Reported value & Unit: | 61.10 % |
| Verified Source of Data | Monitoring survey “HSE_CP2-MP6_2024_US-PS_V3.0, Table 23” |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |

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| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
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| Relevant SDG Indicator | - 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.<br>- 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.<br>- 15.1.1 Forest area as a proportion of total land area. Area of forest save is the monitored parameter. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | % of Improved Stove Users with wood in the project scenario |
| Measuring frequency/Time Interval: | Annually |
| Reported value & Unit: | 2.8 % |
| Verified Source of Data | Monitoring survey “HSE_CP2-MP6_2024_US-PS_V3.0, Table 23” |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
|---|---|
| Relevant SDG Indicator | - 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 |

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| | money save and Percentage of household noted on time save after using the project technology.<br>- 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.<br>- 15.1.1 Forest area as a proportion of total land area. Area of forest save is the monitored parameter. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | % of Traditional Stove Users with wood in the project scenario |
| Measuring frequency/Time Interval: | Annually |
| Reported value & Unit: | 61.10 |
| Verified Source of Data | Monitoring survey “HSE_CP2-MP6_2024_US-PS_V3.0, Table 23” |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
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| Relevant SDG Indicator | - 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.<br>- 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.<br>- 15.1.1 Forest area as a proportion of total land area. Area of forest save is the monitored parameter. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | % of Improved Stove Users with charcoal in the project scenario (Percentage of Improved Stove Users with charcoal in the project scenario) |
| Measuring frequency/Time Interval: | Annually |

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| Reported value & Unit: | 0% |
| Verified Source of Data | Monitoring survey “HSE_CP2-MP6_2024_US-PS_V3.0, Table 23” |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
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| Relevant SDG Indicator | - 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.<br>- 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.<br>- 15.1.1 Forest area as a proportion of total land area. Area of forest save is the monitored parameter |
| Data / Parameter:<br>(as in monitoring plan of PDD): | % of LPG stove usage in the project scenario (Percentage of LPG stove usage in the project scenario) |
| Measuring frequency/Time Interval: | Annually |
| Reported value & Unit: | 11.1 % |
| Verified Source of Data | Monitoring survey “HSE_CP2-MP6_2024_US-PS_V3.0, Table 23” |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |

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| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **nitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
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| Relevant SDG Indicator | - 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 saved, Percentage of household noted on money save and Percentage of household noted on time save after using the project technology.<br>- 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.<br>- 15.1.1 Forest area as a proportion of total land area. Area of forest save is the monitored parameter. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | % of Small LPG stove usage in the project scenario<br>(Percentage of small LPG stove usage in the project scenario) |
| Measuring frequency/Time Interval: | Annually |
| Reported value & Unit: | 25% |
| Verified Source of Data | Monitoring survey “HSE_CP2-MP6_2024_US-PS_V3.0, Table 23” |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
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| Relevant SDG Indicator | - 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 saved, Percentage of household noted on money save and Percentage of household noted on time save after using the project technology.<br>- 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.<br>- 15.1.1 Forest area as a proportion of total land area. Area of forest save is the monitored parameter. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | % of Large LPG stove usage in the project scenario<br>(Percentage of large LPG stove usage in the project scenario) |
| Measuring frequency/Time Interval: | Annually |
| Reported value & Unit: | 75 % |
| Verified Source of Data | Monitoring survey "HSE_CP2-MP6_2024_US-PS_V3.0, Table 23" |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
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| Relevant SDG Indicator | 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 |
| Data / Parameter:<br>(as in monitoring plan of PDD): | $LE_{p,y}$ (Leakage emissions for project scenario p during year y) |
| Measuring frequency/Time Interval: | Every two years |
| Reported value & Unit: | 0 $tCO_2e$ per unit per year |
| Verified Source of Data | Source of data for the following parameter are provided as following:<br>Leakage emissions: ER spreadsheet, Tab: Leakage, Cell D16 |

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| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
|---|---|
| Relevant SDG Indicator | 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. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | Net benefit (a) of SDG1 (Total amount of biomass fuel saves) |
| Measuring frequency/Time Interval: | Annually |
| Reported value & Unit: | 57,363 tonnes |
| Verified Source of Data | Calculated in ER spreadsheet, Tab: Nexus_Summary, cell AJ12 |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
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| Relevant SDG Indicator | 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. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | Net benefit (b) of SDG1 (Total amount of LPG saves) |
| Measuring frequency/Time Interval: | Annually |
| Reported value & Unit: | 1,128 tonnes |
| Verified Source of Data | Calculated in ER spreadsheet, Tab: Nexus_Summary, cell AK12 |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
|---|---|
| Relevant SDG Indicator | 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. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | Net benefit (c) of SDG1 (Percentage of household noted on money save after using the project technology) |
| Measuring frequency/Time Interval: | Annually |
| Reported value & Unit: | 62.70 % |
| Verified Source of Data | Monitoring survey “HSE_CP2-MP6_2024_US-PS_V3.0, Table 30” |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |

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| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
|---|---|
| Relevant SDG Indicator | 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. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | Net benefit (d) of SDG1(Percentage of household noted on time save after using the project technology) |
| Measuring frequency/Time Interval: | Annually |
| Reported value & Unit: | 95.69 % |
| Verified Source of Data | Monitoring survey “HSE_CP2-MP6_2024_US-PS_V3.0, Table 29&31” |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
|---|---|
| Relevant SDG Indicator | 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 |
| Data / Parameter:<br>(as in monitoring plan of PDD): | Net benefits of SDG3 (Number of people using CWP and note that their kitchen is less smoke) |
| Measuring frequency/Time Interval: | Annually |

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| Reported value & Unit: | 387,831 people |
| Verified Source of Data | Calculated, ER spreadsheet, Tab: Nexus_Summary, cell AN12 |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
|---|---|
| Relevant SDG Indicator | 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. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | Net benefits of SDG5 (The number of women and girls benefiting from stop/reduce boiling water and collecting/purchasing cooking fuel.) |
| Measuring frequency/Time Interval: | Annually |
| Reported value & Unit: | 173,735 people |
| Verified Source of Data | Calculated, ER spreadsheet, Tab: Nexus_Summary, cell AO12 |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| Monitoring Parameter Requirement | Assessment/ Observation by the VVB |
|---|---|
| Relevant SDG Indicator | 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. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | Net benefits of SDG6 (Number of people with access to safe drinking water) |
| Measuring frequency/Time Interval: | Annually |
| Reported value & Unit: | 510,977 people |
| Verified Source of Data | Calculated, ER spreadsheet, Tab: Nexus Summary, cell AP12 |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| Monitoring Parameter Requirement | Assessment/ Observation by the VVB |
|---|---|
| Relevant SDG Indicator | 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. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | Net benefits of SDG7 (Amount of energy saved from avoiding boiling water) |
| Measuring frequency/Time Interval: | Annually |
| Reported value & Unit: | 914 TJ |
| Verified Source of Data | Calculated, ER spreadsheet, Tab: Nexus_Summary, cell AQ12 |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |

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| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| Monitoring Parameter Requirement | Assessment/ Observation by the VVB |
|---|---|
| Relevant SDG Indicator | 8.5.1 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. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | Net benefit of SDG8 (Number of new job created by the project with safe and healthy work environment) |
| Measuring frequency/Time Interval: | Every two years |
| Reported value & Unit: | 100 staff |
| Verified Source of Data | Staff report “HSE_CP2-MP6_Em&Inc2023” |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| Monitoring Parameter Requirement | Assessment/ Observation by the VVB |
|---|---|
| Relevant SDG Indicator | 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 |
| Data / Parameter:<br>(as in monitoring plan of PDD): | Net benefits of SDG13 (Amount of ER achieved) |
| Measuring frequency/Time Interval: | Annually |
| Reported value & Unit: | 103,069 $tCO_2e$ |
| Verified Source of Data | Calculated, ER spreadsheet, Tab: Nexus_Summary, cell F12 |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |

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| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
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| Relevant SDG Indicator | 15.1.1 Forest area as a proportion of total land area. The area of forest save is monitored indicator. |
| Data / Parameter:<br>(as in monitoring plan of PDD): | Net benefits of SDG15 (Area of forest save) |
| Measuring frequency/Time Interval: | Annually |
| Reported value & Unit: | 354 Hectare |
| Verified Source of Data | Calculated, ER spreadsheet, Tab: Nexus_Summary, cell F12 |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Refer assessment above |
| Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD: | NA |
| Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place? | Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. |
| In case only partial data are availablebecause activity levels or non-activityparameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for Change been approved? | NA |