

GOLD STANDARD FOR THE GLOBAL GOALS (GS4GG)
REPORT
-
VERIFICATION



Project Title:	Expanding access to LPG in Haiti through microfinance services
Monitoring Period:	01/04/2019 – 31/03/2021 (Inclusive of both days)
GS project ID:	GS 2564
Internal ID:	BELL_CDM 2021_HAI LPG Microfinance_GS_VER
Customer:	South Pole
Date:	28/09/2022
Revision:	04

SUMMARY			
Reference No.	Date (first version)	Version No.	Date (last version)
BELL_CDM 2021_HAI LPG Microfinance_GS_VER	16/02/2022	04	28/09/2022
GS4GG Verification			
GS4GG Certified Product (sought):		GHG Emission Reductions	
GS4GG SDG Impact Statement (sought):		Impact Certification	
General Information			
Client	South Pole		
Project Title	Expanding access to LPG in Haiti through microfinance services		
Project Participants	Entrepreneurs du Monde		
Project Location	Municipalities of Port au Prince, Delmas, Tabarre, Cité Soleil, Piétonville , Carrefour ,Croix des bouquets of Haiti		
Contact Person	Barbara Adelhoume		
Monitoring Period	01/04/2019 – 31/03/2021 (Inclusive of both days)		
GS4GG Version: GS4GG Principles and Requirements Version 1.2 GS4GG Activity Requirements: Community Services Activities Applied Methodology Version: Technologies and practices to displace decentralized thermal energy consumption (TPDDTEC), version 3.1 Current Methodology Version: Reduced emissions from cooking and heating – technologies and practices to displace decentralized thermal energy consumption (TPDDTEC) 4.0		GS4GG Sectoral Scope: 2 UNFCCC CDM Sectoral Scope: 3 Technical Area: 3.1	
Published Monitoring Report Version: 01 Date: 21/10/2021			
Project Design Document Version: 10 Date: 29/03/2021 GS Passport Version (if applicable): NA		Final Monitoring Report Version: 04 Date: 09/09/2022	
Estimated SDG Goals: SDG 3 (Good Health and Well-being): 100% SDG 7 (Affordable and clean energy): 3,434,244 days SDG 13 (Climate action): 74,835 tCO ₂ e/annum			
Actual SDG Goals achieved during current monitoring period: SDG 3 (Good Health and Well-being): 58.25% SDG 7 (Affordable and clean energy): 2,948,254 days SDG 13 (Climate action): 98,266 tCO ₂ e/annum			
Selected Sustainable Development Goals (SDGs): 3, 7 and 13			
Verification Summary			
LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by South Pole to perform the 5 th periodical verification of “Expanding access to LPG in Haiti through microfinance services” (Ref. No. GS 2564) applying the methodology “Technologies and Practices to Displace Decentralized Thermal Energy Consumption”, Ver 3.1. The management of South Pole is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions.			
A desk review and virtual site visit have been conducted to verify the data submitted in the monitoring			

report. Applus+ Certification confirms the following have been reviewed:

- The GS4GG PDD V10 including the monitoring plan;
- Monitoring report(s);
- The applied monitoring methodology;
- The Gold Standard for Global Goals "Principles and Requirements" Version 1.2 and GS4GG guideline and related Annex.
- All information and references relevant to the project activity's resulting in emission reductions.

Entrepreneurs du Monde has implemented **Expanding access to LPG in Haiti through microfinance services** to facilitate access to cleaner, more modern and cheaper sources of energy for all. This program works as a social micro-franchise that distributes more efficient charcoal cookstoves, liquified petroleum gas (LPG) cookstoves and solar lanterns.

The project activity "Expanding LPG access in Haiti through microfinance services" is in line with this approach since it aims to promote the use of LPG as a source of energy for cooking, thus limiting the usage of charcoal and reducing GHG emissions.

The project takes place in Haiti in the following municipalities:

- Port au Prince (18°32'50.377" N 72°20'22.534" W)
- Delmas (18°33'6.647" N 72°17'31.225" W)
- Tabarre (18°33'43.195" N 72°15'2.583" W)
- Cité Soleil (18°34'41.76" N 72°20'8.165" W)
- Piétonville (19°0'0" N 72°25'0.011" W)
- Carrefour (18°32'4.334" N 72°24'33.298" W)
- Croix des bouquets (18°34'39.16" N 72°13'46.638" W)

As well as reducing GHG emissions and helping to fight deforestation, this project also offers the chance to reduce emissions of toxic gases such as carbon monoxide and particulate matter inside households. Indeed, the combustion of charcoal with traditional ones means the end users are saving significant amount of money because less fuel is needed for their cooking needs.

Applus+ Certification confirms that the project is implemented in accordance with the validated PDD V10. The monitoring plan complies with the applied methodology Technologies and practices to displace decentralized thermal energy consumption (TPDDTEC), version 3.1 /09/ and the Gold Standard for Global Goals "Principles and Requirements" Ver.1.2 /11/, GS4GG guideline the monitoring has been carried out in accordance with the monitoring plan. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the projects GHG emissions and the resulting GHG emission reductions reported and related to the valid project baseline and monitoring and its associated documents. Based on the information reviewed and evaluated Applus+ Certification confirms that the implementation of the project has resulted in 98,266 tCO₂e emission reductions during period 01/04/2019 to 31/03/2021 (Both days included).

ASSESSMENT TEAM		
Team Members	Type of Resource ¹	Organization (for OEs)
Lead Auditor: Mr. Pankaj Kumar	☐ IR ☐ EI ☒ OE	M/s True Quality Certifications Private Limited
Auditor: Mr. Jitendra Mohan Singh	☐ IR ☐ EI ☒ OE	M/s True Quality Certifications Private Limited

¹ IR (Internal Resource); EI (External Individual); OE (Outsourced Entity)

ASSESSMENT TEAM		
Team Members	Type of Resource ¹	Organization (for OEs)
Technical Expert: Mr. Pankaj Kumar	☐ IR ☐ EI ☒ OE	M/s True Quality Certifications Private Limited
Technical Reviewer: Mr. Simon Shen	☐ IR ☒ EI ☐ OE	

ABBREVIATIONS	
AM	Approved Methodology
CAR	Corrective Action Request
CDM EB	CDM Executive Board
CER	Certified Emission Reduction
CL/CR	Clarification Request
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
EIA	Environmental Impact Assessment
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GS4GG (or GS)	Gold Standard for Global Goals
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-Governmental Organization
SDG	Sustainable Development Goal
TAC	Gold Standard Technical Advisory Committee
PDD	Project Design Document
PP	Project Participant
UNFCCC	United Nations Framework Convention for Climate Change
VVB	Validation and Verification Body
VVS	Validation and Verification Standard

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Appendix 1: Corrective Action Request/Clarification Request/Forward Action Request resolution table.

Appendix 2: Calibration details of monitoring meters.

Appendix 3: Audit Team CVs.

1. INTRODUCTION

1.1 Objective

LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by South Pole to perform the fifth periodical verification of “Expanding access to LPG in Haiti through microfinance services” applying the methodology Technologies and practices to displace decentralized thermal energy consumption (TPDDTEC), version 3.1 and GS4GG guidelines. Gold Standard projects must undergo periodic audits and verification of emission reductions as the basis for issuance of Gold Standard VERs.

The objective of the verification work is to assess the compliance with the requirements of the GS4GG guidelines and relevant Principles and Requirements. According to this assessment Applus+ Certification shall:

- Ensure that the project activity has been implemented and operated as per the GS PDD and transitional documents for registration and that all physical features (technology, project equipment, monitoring equipment) of the project are in place;
- Ensure that the published MR and other supporting documents provided are complete, verifiable and in accordance with applicable Gold Standard i.e. GS4GG requirements;
- Ensure that the actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology;
- Evaluate the data recorded and stored as per the Technologies and practices to displace decentralized thermal energy consumption (TPDDTEC), version 3.1.

1.2 Scope

The verification scope encompasses an independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the VVB. The verification is based on the submitted monitoring report, the respective PDD V10 as well as its validation report, the applied monitoring methodology, relevant decisions, clarifications and guidance from the CMP and the EB, GS4GG guideline and any other information and references relevant to the project activity's resulting emission reductions. These documents are reviewed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures, GS4GG guideline and relevant Principles and Requirements, as well as their related rules and guidance.

Based on the requirements in the CDM VVS for project activities version 03 for the project activity as well as the GS4GG guideline, Applus+ Certification has applied a rule-based approach for the verification of the project. The principles of accuracy, completeness, relevance, reliability and credibility were combined with a conservative approach to establish a traceable and transparent verification opinion.

The verification considers both quantitative and qualitative information on emission reductions. The verification also considers the monitoring of sustainable parameters.

The verification is not meant to provide any consultancy towards the client. However, stated requests for clarifications, corrective and/or forward actions may provide input for improvement of the monitoring activities.

1.3 Description of the project activity

The project title "Expanding access to LPG in Haiti through microfinance services" is implemented by Entrepreneurs du Monde. The project aims to facilitate access to cleaner, more modern and cheaper sources of energy for all. This program works as a social micro-franchise that distributes more efficient charcoal cookstoves, liquified petroleum gas (LPG) cookstoves and solar lanterns.

The location of the project activity takes place in Haiti in the following municipalities:

- Port au Prince (18°32'50.377" N 72°20'22.534" W)
- Delmas (18°33'6.647" N 72°17'31.225" W)
- Tabarre (18°33'43.195" N 72°15'2.583" W)
- Cité Soleil (18°34'41.76" N 72°20'8.165" W)
- Piétonville (19°0'0" N 72°25'0.011" W)
- Carrefour (18°32'4.334" N 72°24'33.298" W)
- Croix des bouquets (18°34'39.16" N 72°13'46.638" W):

As well as reducing GHG emissions and helping to fight deforestation, this project also offers the chance to reduce emissions of toxic gases such as carbon monoxide and particulate matter inside households. Indeed, the combustion of charcoal with traditional ones means the end users are saving significant amount of money because less fuel is needed for their cooking needs. As per GS4GG PDD V10, the ER is estimated as 74,835tCO₂e during its entire crediting period (01/01/2015 to 31/12/2024).

A total of 4,399 LPG stoves (geared toward domestic use) are included into the project until the end of this monitoring period. During the current monitoring period, a total of 2,948,254 stove days has been recorded, representing the total time the stoves were available to the users.

Chronological stove distribution:

Year	Domestic stoves
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2016	362
2017	1686
2018	1150
2019	847
2020	334
2021	20

(Source: Database, 2021)

The unique identification of stoves included in the project is achieved through sales receipts. Each sales receipt includes the sales date, stove type and quantity and is signed by the buyer. Only stoves with their corresponding sales receipt are included in the project. Any purchase receipt will be provided upon request for review.

2. **METHODOLOGY**

Applus+ Certification approach to the verification is a two-stage process. In the 1st stage, Applus+ Certification completed a strategic review and risk assessment of the project's activities and processes in order to gain a full understanding of:

- Activities associated with all the sources contributing to the project emissions and emission reductions, including leakage if relevant;
- Protocols used to estimate or measure GHG emissions from these sources;
- Collection and handling of data;
- Controls on the collection and handling of data;
- Means of verifying reported data; and
- Compilation of the monitoring report.

Applus+ Certification used a periodical Verification Checklist which, based on the risk-based assessment of the parameters and data collection and handling processes for each of those parameters, describes the verification approach and the sampling plan.

In the 2nd stage, using the Verification Checklist, Applus+ Certification verified the implementation of the monitoring plan and the data presented in the Monitoring Report for the period in question. This involved interviewing PP representative during the remote audit and a desk review of the Monitoring Report. This Verification Report describes the findings of this assessment.

2.1 **Appointment of the assessment team**

According to the sectoral scope / technical area and experience in the sectoral or national business environment, LGAi Technological Center, S.A. (Applus+ Certification) has composed a project assessment team in accordance with the appointment rules in the internal Quality Management System of LGAi Technological Center, S.A. (Applus+ Certification).

The composition of audit team shall be approved by the LGAi Technological Center, S.A. (Applus+ Certification) ensuring that the required skills are covered by the team.

The four qualification levels for team members that are assigned by formal appointment rules are as presented below:

- Lead Auditor (LA)
- Auditor (A) / Auditor in Training (AiT)
- Technical Expert (TE)
- Technical Reviewer (TR)

The sectoral scope/technical area knowledge linked to the applied methodology/ies shall be covered by the assessment team.

Name	Role	SS Coverage	TA Coverage	Financial aspect	Host country experience
Mr. Pankaj Kumar	LA/TE	YES	YES	NA	YES

Mr. Jitendra Mohan Singh	A	YES	YES	NA	NA
Mr. Simon Shen	TR	YES	YES	NA	NA

The complete list of CVs is included as Appendix 3 of this report.

2.2 Document review

The Monitoring Report version 01 was submitted to VVB before the verification activities started. The MR was assessed based on all the relevant documents. The aim of the assessment in the desk review was to:

- Verify the completeness of the data and the information presented in the MR;
- Check the compliance of the MR with respect to the monitoring plan depicted in the GS PDD and verify that the applied methodology was carried out. Particular attention to the frequency of measurements, usage survey, and the quality assurance and quality control procedures of the power plant was checked by the assessment team.
- Evaluate the data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.
- Please check section 4 of this report for detail of the documents checked.

2.3 On site assessment and follow up interviews

As a part of the verification, the remote audit has been performed by the assessment team as per "Site visit and remote audit requirements and procedures", version 1.0

Details of interviewees, topics covered and additional information presented below:

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1	Adoleho ume	Barbara	PP representative	12/11/2021	Project implementation, Baseline emissions, ER calculations, Sustainable monitoring etc.	Mr. Pankaj kumar/ Mr. Jitendra Mohan Singh
2	Gonzale z	Santiago	South Pole	12/11/2021	Project implementation, Baseline emissions, ER calculations, Sustainable monitoring etc.	
3	De Valle	Sebastian	South POle	12/11/2021	Project	

					implementation, Baseline emissions, ER calculations, Sustainable monitoring etc.	
4.	Milor	Claudine	Local stakeholder	12/11/2021	Stakeholder meeting- Employment opportunities, Standard of Livings etc.	
5.	Oras	Macula	Local stakeholder	12/11/2021	Stakeholder meeting- Employment opportunities, Standard of Livings etc.	
6.	Frederic	Elmira	Local stakeholder	12/11/2021	Stakeholder meeting- Employment opportunities, Standard of Livings etc.	
7.	Sanon	Carline	Local stakeholder	12/11/2021	Stakeholder meeting- Employment opportunities, Standard of Livings etc.	
8.	Joseph	Alexandra	Local stakeholder	12/11/2021	Stakeholder meeting- Employment opportunities, Standard of Livings etc.	
9.	Noel	Louinise	Local stakeholder	12/11/2021	Stakeholder meeting- Employment opportunities, Standard of Livings etc.	
10.	Petida	Magalie	Local stakeholder	12/11/2021	Stakeholder meeting- Employment opportunities, Standard of Livings etc.	
11.	Charles	Romilda	Local stakeholder	12/11/2021	Stakeholder meeting- Employment opportunities,	

					Standard of Livings etc.	
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The objective of the remote audit assessment is to:

- Confirm the implementation and operation of the project;
- Review the data flow for generating, aggregating and reporting the monitoring parameters;
- Confirm the correct implementation of procedures for operations and data collection;
- Cross-check the information provided in the MR documentation with other sources;
- Check the monitoring equipment against the requirements of the GS PDD and the approved methodology, including sampling, survey etc.;
- Review the calculations and assumptions used to obtain the GHG data and ER;
- Identify if the quality control and quality assurance procedures are in place to prevent or correct errors or omissions in the reported parameters.
- Confirm the SDG goals/ Sustainable monitoring parameter as per the GS PDD
- To understand grievance (if any) from the villagers during the monitoring period.
- Local stakeholder meeting details:

Name of the stakeholder	Claudine Milor
Occupation	Villager
DOE QUESTION: Did PP provided employment opportunity to locals by implementing the project activity? Answer: Yes, employment is generated and the locals are given priority. Assessment team noted that locals were employed for the project activity for the current monitoring period. VVB also like to conclude that during the remote audit few stakeholders selected randomly and interviewed and confirm that local people employed for LPG distribution work VVB also found that skilled local persons were also employed by the organization for the operation and maintenance of the stoves.	

Name of the stakeholder	Louinise Noel
Occupation	Local stakeholder
VVB questions: Did the LPG stoves have any harmful impact on indoor atmosphere Answer: NO. The stoves are some free and now issue of indoor pollution by using these stoves	

2.4 Quality of evidences

Sufficient evidence covering the full verification period in the required frequency is available to verify the figures stated in the final MR Version 04. Specific cross-checks have been done in cases that further sources were available. The monitoring report's figures were checked by the assessment team against the raw data. The data collection system meets the requirements of the monitoring plan as per the methodology.

2.5 Reporting of findings

As an outcome of the verification process, the assessment team can raise different types of findings.

Where a non-conformance arises the assessment team shall raise a Corrective Action Request (CAR). A CAR is issued, where:

- Non-compliance with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- Modifications to the implementation, operation and monitoring of the GS project activity has not been sufficiently documented by the project participants;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;
- Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

The assessment team shall raise a Clarification Request (CR) if information is insufficient or not clear enough to determine whether the applicable CDM/GS requirements have been met.

All CARs and CRs raised during verification shall be resolved prior to submitting a request for issuance.

Forward Action Requests (FARs) may be raised during verification for actions where the monitoring and reporting require attention and/or adjustment for the next verification period.

Please refer Appendix 1 of this report. Total Numbers of CARs: CAR: 02, CL: 00, FARs: 00

2.6 Internal Quality Control

As a final step of verification, the final documentation including the verification report has to undergo an internal quality control by the Technical Reviewer. Each report has to be finally approved either by the VVB's Technical Manager or the Deputy. This approval process also includes another quality assurance check in terms of Administrative Review. In case one of these two persons is part of the assessment team, the final approval can only be given by the person who is not a part of the assessment team. If the documents have been satisfactorily approved, the Request for Issuance is submitted to the GS Registry along with the relevant documents.

3. VERIFICATION FINDINGS

3.1 FARs from Validation / Previous Verification

The Forward Action Request (FAR) opened in the last verification was closed accordingly and no FAR has been opened for this period. This is 5th periodic verification for the project activity.

The following FAR has been raised during the Design Change Review carried out prior to this verification.

There has been design change in the form of change in the scale of the project from micro-scale to small scale. The verifying VVB shall assess and provide its opinion and conclusion in the verification report with regard to:

- Whether the revised estimation of emission reductions due to the change considers the applicable limits in accordance with GS4GG requirements (within the small-scale threshold).

VVB has checked and confirmed that during this monitoring period, the maximum number of operational stoves of 4,399 ICS were in operation, resulting in energy savings of approximately 13.38 GWth/yr which is below the small-scale threshold of 180 GWth/yr. It has been also checked that the estimate contains total number of distributed cook-stoves including those in 2021, therefore it conservatively indicates that energy savings are still below the small-scale threshold.

- Whether the revised PDD complies with all the requirements of the applied methodology

The adequacy and compliance of the monitoring plan in the Monitoring report was found as per the requirements laid by the approved GS4GG PDD. The information flow (from data generation, aggregation, to recording, calculation and reporting) is already included under respective parameter. The verification team has verified all the data and collected evidence as per the required monitoring frequency and found to be correct and appropriate meeting the requirements of the applied methodology and GS PDD.

- How the change would impact on the overall operation/ability of the project activity to deliver emission reductions or net anthropogenic removals as stated in the PDD.

VVB has confirmed that design change results in an increase in net benefit with respect to emission reductions.

- Whether stakeholder's consultation will be required to be conducted for the design change

The design change does not expand the geographic boundaries of the project; stakeholders within the geographical area of the project were informed at the time of validation and have always been aware of the project activities, no change has been made to the technologies to be implemented and the baseline remains the same, therefore, it is considered that the results, comments, and considerations of the local stakeholder consultation are still representative. Hence, it is acceptable that no new stakeholder consultation is required.

- The extended users are not part of any other project/PoA

The stoves are not considered within the other project, the sales are unique and no other project proponent outside Entrepreneurs du Monde/PALMIS Enèji is entitled to the benefits of emission reductions. VVB has verified and is acceptable.

3.2 Project Implementation in accordance with the GS Project Design Document

The project activity was fully implemented according to the description presented in the PDD. The assessment team confirms, through the remote audit that all physical features of the proposed project activity including data collecting systems and storage have been implemented in accordance with the validated PDD.

The project activity was in normal operational during the monitoring period and the same has been confirmed during the remote audit interviews. No unusual activities observed during the monitoring period and project activity was undergone scheduled maintenance as per the recommendation of the manufactures.

Project Participants	Entrepreneurs du Monde
Title of project activity	Expanding access to LPG in Haiti through microfinance services
GS Registration No.	GS 2564
GS Version applied	The project has been submitted to GS4GG as per the guidelines of Gold Standard for Global Goals "Principles & Requirements" Version 1.2. Hence the current verification of the project activity has followed the GS4GG version of the Gold Standard.
Baseline and monitoring methodology	Technologies and practices to displace decentralized thermal energy consumption (TPDDTEC), version 3.1
Project type	The project activity "Expanding LPG access in Haiti through microfinance services" is in line with this approach since it aims to promote the use of LPG as a source of energy for cooking, thus limiting the usage of charcoal and reducing GHG emissions.
Project scale	Small
Location of the project activity	The project takes place in Haiti in the following municipalities: • Port au Prince • Delmas • Tabarre • Cite Soleil • Pietinville • Carrefour • Croix des bouquets
Project's crediting period	01/01/2015 to 31/12/2024
Total duration of the project	10 years (Fixed crediting period)
Period verified in this verification	01/04/2019 to 31/03/2021 (Inclusive of both days)

During this monitoring period, the maximum number of operational stoves of 4,399 ICS were in operation, resulting in energy savings of approximately 13.38 GWth/yr. This figure is below the small-scale threshold of 180 GWth/yr.

The estimate contains the total number of distributed cookstoves including those in 2021, therefore, it conservatively indicates that energy savings are still below the small-scale threshold.

Based on interview with PP representative the verification team was able to confirm that the project implementation is in accordance with the project description contained in the GS PDD (version 10, dated 29/03/2021/04/)

The proposed and accepted (after the 4th verification) design change consists of scaling up the project by increasing the distribution of domestic LPG stoves to users within the same geographical boundaries. No change has been made to the technologies to be implemented and the baseline remains the same.

Project equipment and the technology are employed as mentioned in the GS PDD /07/.

The technical details of the project activity as confirmed during the remote interview on ms-teams in sec. 1.3 above.

There is no event or situation including emergency situations occurred during this monitoring period which has impacted the applicability of methodology.

Assessment of actual emission reductions with the estimate emission reductions in PDD:

Estimated Emission Reduction as per GS PDD	74,835 tCO ₂ e
Actual Emission Reduction for the monitoring period	98,266 tCO ₂ e
Is any increase of VERs occurred?	Yes
Reason for increase of VERs	overly conservative approach

The ex-ante emissions were calculated using an overly conservative approach with a method proposed by the project developer, while the ex-post estimates were made based on the methodology TPDDTEC.

Verification team considers the project and monitoring description of the project contained in the Monitoring report to be complete and accurate. The Monitoring report complies with the relevant methodology, tools, forms and guidance which are in line with that available in the documents (including PDD) with Gold Standard.

Opinion:

a) In opinion of the assessment team the implementation and operation of the project activity is in compliance with the description in the PDD V10.

b) The proposed design change consists of scaling up the project by increasing the distribution of domestic LPG stoves to users within the same geographical boundaries. No change has been made to the technologies to be implemented and the baseline remains the same.

c) The actual emission reductions for the current monitoring period are 98,266tCO₂e which are higher than the estimated ERs (74,835 tCO₂e) for the comparable period.

3.3 Compliance of the Monitoring Plan with the Monitoring Methodology

The verification team is able to confirm that the monitoring plan contained in the PDD (version 09, dated 29/03/2021) is in accordance with the approved methodology applied by the project activity — Technologies and practices to displace decentralized thermal energy consumption (TPDDTEC), version 3.1.

The monitoring plan and the monitoring system implemented are in compliance to the applied monitoring methodology Technologies and practices to displace decentralized thermal energy consumption (TPDDTEC), version 3.1. All other requirements of the applied methodology are met. Furthermore, it can be confirmed that the ex-ante value for CO₂ emission factor (EF) sourced from IPCC default value in the GS PDD has been correctly applied in the calculation of emission reductions. The verification team confirms that the monitoring plan of the GS project activity complied with the applied methodology.

During the verification all relevant monitoring parameters (as listed in the PDD) have been verified with regard to the appropriateness of the applied measurement/determination method, the correctness of the values applied for ER calculation, the accuracy, and applied QA/QC measures.

Opinion:

The monitoring plan mentioned in the GS PDD is in line with the applied methodology i.e. — Technologies and practices to displace decentralized thermal energy consumption (TPDDTEC), version 3.1. The monitoring mechanism is in line with the methodology and is effective and reliable.

3.4 Completeness of Monitoring

The monitoring has been carried out in accordance with the monitoring plan contained in the PDD (version 10, dated 29/03/2021) /04/. During the course of verification, all relevant monitoring parameters have been verified with regard to the appropriateness of the applied measurement / determination method and applied QA/QC procedures. It is confirmed that the monitoring parameters have been measured / determined without material misstatements.

The verification team reviewed the actual monitoring during the skype interview and from document review and compared it against the requirements of the monitoring plan in the PDD and found in line.

During this monitoring period, several limitations arose that prevented the normal performance of the procedures established by the methodology and the GS guidelines. These restrictions are listed below:

- Total country containment and international flight restrictions due to the outbreak and spread of COVID 19;
- Port-au-Prince was suffering from political and social tensions;

All end users that could be found have been surveyed. Finding end users is difficult in the context of the project for the following reasons::

- a lot of stoves are sold through resellers, who do not have the contact details of their clients;-
- sometimes end users have changed their contact number, which makes it impossible to find them.

Therefore, usage surveys for 2020 were not feasible. Only until May 2021 was possible to access the project area. However, mobility and permanence in specific areas remained risky for the team after the law-and-order situation worsened. As a result, only 95 usage surveys could be conducted in 2021 of the stoves sold in the entire implementation period. The verification team assessed the monitoring techniques and each monitoring value in the monitoring report; and provided a short summary on the verification of every parameter listed in the monitoring plan and used for calculation of emission reductions.

a. Data and parameters fixed ex ante or at renewable of crediting period

$EF_{b,co2}$, $EF_{b,non\ co2}$, $EF_{p,co2}$, $EF_{p,non\ co2}$, NCV_b & NCV_p were mentioned as ex-ante fixed parameter.

The value for $EF_{b,co2}$, $EF_{b,non\ co2}$, $EF_{p,co2}$, $EF_{p,non\ co2}$, NCV_b & NCV_p was considered from IPCC default value. The value of CO2 emission factor considered as CO2 emission factor for the GS4GG project activity.

The default value in turn is used for baseline calculation as per the formula given in the GS PDD for the current monitoring period. Assessment team checked the values, source of data, choice of data, purpose of the data mentioned in the MR from the GS PDD and confirms that the similar approach was considered for the current monitoring period also.

The relevant Emission factor values used for emission reduction calculation are as below. Also, as GS4GG "Principles and Requirements" V 1.2 the ex-ante fixed parameters are now connected to relevant SDG indicator which is acceptable to the assessment team.

Relevant SDG Indicator	SDG 13: Climate Action
Data/parameter:	$f_{NRB,i,y}$
Unit	Fractional non-renewability
Description	Non-renewability status of woody biomass fuel in scenario i during year y
Measured/calculated/default	Default
Source of data	Registered PoA DD GS2096
Value(s) of monitored parameter	96%
Monitoring equipment	The biomass collection area of the project is the whole Haitian national territory. This value is derived from an assessment made at the national level.
QA/QC procedures	Transparent data analysis and reporting
Cross Checks	The value was cross checked with the registered PoA DD GS2096

Relevant SDG Indicator	SDG 13: Climate Action
Data/parameter:	$P_{b,y}$
Unit	kg/day/household
Description	Quantity of fuel that is consumed in baseline scenario b during year y
Source of data checked by the assessment team	LPG, kerosene, firewood and charcoal fuel consumption will be monitored
Value(s) of monitored parameter	$P_{com,firewood} = 0$ kg/day/restaurant $P_{com,charcoal} = 6.46$ kg/day/restaurant $P_{com,LPG} = 0$ kg/day/restaurant $P_{com,kerosene} = 0.013$ kg/day/restaurant $P_{dom,firewood} = 0$ kg/day/household $P_{dom,charcoal} = 2.32$ kg/day/household $P_{dom,LPG} = 0.05$ kg/day/household $P_{dom,kerosene} = 0.08$ kg/day/household
Means of verification:	Assessment team checked The Baseline Performance Field Test (BPFT). Emission reduction calculated in thus correct and accurate.
Cross check mechanism	All the formulas are applied in line with the GS4GG PDD

b. Data and parameters monitored

Relevant SDG Indicator	SDG 3
Data/parameter:	Share of users that perceive less smoke in the operating area
Unit	%

Description	Share of users that perceive a reduced amount of smoke resulting in improved living conditions and contributing to a reduction of mortality rates attributed to chronic respiratory disease and air pollution.
Source of data checked by the assessment team	Survey conducted during ICS monitoring visits
Value(s) of monitored parameter	58.25%
Means of verification:	Assessment team checked survey report. Emission reduction calculated in thus correct and accurate.
Cross check mechanism	All the formulas are applied in line with the GS4GG PDD

Relevant SDG Indicator	SDG 3
Data/parameter:	Security measures for users around LPG
Unit	%
Description	Share of users that perceive a reduction in physical burns due to the use of the new LPG models compared to the baseline stoves
Measured/calculated/default	100%
Source of data	Data collected through monitoring survey. People are asked about the amount the frequency of burnings when using the ICS compared to the baseline surveys results
Value(s) of monitored parameter	100%
Monitoring equipment	-
Measuring/reading/recording frequency:	Annually
QA/QC procedures:	Transparent data analysis and reporting
Cross Checks:	Survey Report

Relevant SDG Indicator	SDG 7								
Data/parameter:	Total stove days per year								
Unit	-								
Description	Number of total ICS days that reflects the active usage of clean cookstoves and the access to cleaner fuels								
Measured/calculated/default	Data collected through monitoring survey. People are asked about the amount of smoke inside the house when using the ISC compared to the baseline surveys results.								
Source of data	Survey conducted during ICS monitoring visits and project database								
Value(s) of monitored parameter	<table border="1"> <thead> <tr> <th>Year</th><th>Days</th></tr> </thead> <tbody> <tr> <td>2019</td><td>1,025,359</td></tr> <tr> <td>2020</td><td>1,529,402</td></tr> <tr> <td>2021</td><td>393,493</td></tr> </tbody> </table>	Year	Days	2019	1,025,359	2020	1,529,402	2021	393,493
Year	Days								
2019	1,025,359								
2020	1,529,402								
2021	393,493								
Monitoring equipment	Not applicable.								

Measuring/reading/recording frequency:	Annually
Calculation method (if applicable):	-
QA/QC procedures:	Transparent data analysis and reporting
Cross Checks:	Survey report

Relevant SDG Indicator	SDG 13
Data/parameter:	ER _{b,p,y,CO2}
Unit	tCO ₂ /day
Description	Specific CO ₂ emission savings for an individual technology of project p against an individual technology of baseline b in year y
Measured/calculated/default	Calculated based on statistical analysis of the data collected from the field tests
Source of data	Calculated
Value(s) of monitored parameter	AR4: 0.0538 AR5: 0.0551
Monitoring equipment	Not applicable.
Measuring/reading/recording frequency:	Every two years
QA/QC procedures:	Transparent data analysis and reporting
Cross Checks:	Field test data

Relevant SDG Indicator	SDG 13
Data/parameter:	P _{p,y}
Unit	kg/household-day, kg/person-meal, etc.
Description	Quantity of fuel that is consumed in project scenario p during year y. LPG, kerosene, firewood and charcoal fuel consumption monitored
Measured/calculated/default	Measured
Source of data	Total sales record, project FT, project FT updates, and any applicable adjustment factors
Value(s) of monitored parameter	P _{dom,firewood} = 0 kg/day/household P _{dom,charcoal} = 0.280 kg/day/household P _{dom,LPG} = 0.859kg/day/household P _{dom,kerosene} = 0.007 kg/day/household
Monitoring equipment	Not applicable.
Measuring/reading/recording frequency:	Every two years
Calculation method (if applicable):	Scales with a 100g accuracy will be used to weigh the fuel. The PFT will be done in the second half of the crediting year among a sample selected to insure proper representation of stove age

	(implicit stratification basic on sale date)
QA/QC procedures:	Transparent data analysis and reporting
Cross Checks:	VVB has confirmed that the scales used for the KPT were calibrated and it was verified with standardized weights where the correct weight could be seen on them. Since the methodology does not call for this type of procedure, no records were kept at the time of the KPT.

Relevant SDG Indicator	SDG 13
Data/parameter:	$U_{p,y}$
Unit	Percentage
Description	Usage rate in project scenario p during year y
Measured/calculated/default	Measured
Source of data	Annual usage survey
Value(s) of monitored parameter	$U_{p,2019}=84.31\%$ $U_{p,2020}= 84.66\%$ $U_{p,2021}= 84.66\%$
Monitoring equipment	Not applicable.
Calculation method (if applicable):	Calculated based on the Usage Surveys results.
QA/QC procedures:	Transparent data analysis and reporting, Responses reported in the surveys have been compared with photos taken of the ICS at the time of sampling.
Cross Checks:	Usage survey record

Relevant SDG Indicator	SDG 13								
Data/parameter:	$N_{p,y}$								
Unit	Project technologies credited (units)								
Description	Technologies in the project database for project scenario p through year y								
Measured/calculated/default	Measured								
Source of data	Total sales record								
Value(s) of monitored parameter	<table border="1"> <thead> <tr> <th>Year</th><th>Days</th></tr> </thead> <tbody> <tr> <td>2019</td><td>1,025,359</td></tr> <tr> <td>2020</td><td>1,529,402</td></tr> <tr> <td>2021</td><td>393,493</td></tr> </tbody> </table>	Year	Days	2019	1,025,359	2020	1,529,402	2021	393,493
Year	Days								
2019	1,025,359								
2020	1,529,402								
2021	393,493								
Monitoring equipment	Not applicable.								
Calculation method (if applicable):	Taken from the sales records and project data base.								
QA/QC procedures:	Transparent data analysis and reporting.								
Cross Checks:	Sales receipt								

The verification team confirms;

- a) The monitoring plan implemented is in line with monitoring plan included in approved GS4GG PDD.
- b) The monitoring complies with the requirement of the applied methodology.
- c) The values included in the monitoring report and corresponding emission reduction sheets are verified, cross checked and included under each monitoring parameter, wherever appropriate
- d) The findings relevant to each parameter, wherever appropriate are discussed in detail in Appendix 1 of this report.

In summary, the verification team confirms that all the ex-post parameters are monitored in accordance with the approved monitoring plan and applied methodology.

c. Implementation of sampling plan

During the remote audit verification, a random sampling approach has been used by the verification team to verify the reported values for the monitored parameters as listed in the MR which are determined through sample survey by PP.

For the determination of VVB's acceptance sample size, verification team has selected the following using its professional judgment:

- i. Acceptable quality level (AQL) – 0.5%
- ii. Unacceptable Quality Level (UQL) – 10%
- iii. Producer risk - 5%
- iv. Consumer risk - 5%

Verification team has determined acceptance sample size for all the sample survey parameters based on the "Table 1. Sample size and acceptance number based on AQL, UQL, and producer and consumer risks" of standard "Sampling and surveys for CDM project activities and programmes of activities" version 04.0. From the above factors, the verification team determined the minimum sample size (n) as 8 and acceptance number (c) as 0. The sample size used to verify the reported values for the monitored parameters which are determined through sample survey by PP. The VVB interviewed the Improved cook stove users and filled the VVB survey form to check the acceptability of the data for each record in the PP's sample records. Verification team shared the samples with PP during remote audit.

Using acceptance sampling approach, verification team checked the PP's samples results (reported in the Monitoring forms) along with the following evidences:

- Remote inspection/interview
- PP household database
- Database of all project participating households using the various technologies as per the ER sheet
- Thermal efficiency of the stoves from stove supplier/determined from qualified laboratory.

The result of the survey is given below:

Parameters	VVB Sample size	No of PP's record beyond unacceptable level	Accepted
Monitoring parameters as per D.2 of the MR	8	0	8

During this monitoring period, several limitations arose that prevented the normal performance of the procedures established by the methodology and the GS guidelines. These restrictions are listed below:

- Total country containment and international flight restrictions due to the outbreak and spread of COVID 19;
- Port-au-Prince was suffering from political and social tensions;
 - o All end users that could be found have been surveyed. Finding end users is difficult in the context of the project for the following reasons: a lot of stoves are sold through resellers, who do not have the contact details of their clients;-
 - o sometimes end users have changed their contact number, which makes it impossible to find them.

Therefore, usage surveys for 2020 were not feasible. Only until May 2021 was possible to access the project area. However, mobility and permanence in specific areas remained risky for the team after the law-and-order situation worsened. As a result, only 95 usage surveys could be conducted in 2021 of the stoves sold in the entire implementation period.

Following the requirement of the "Sampling and surveys for CDM project activities and programmes of activities" version 04.0, the acceptability of data in the random sample chosen from the PP's sample records was determined. Based on the number of records where there was agreement, it was determined whether the PP's sample records meet the requirements. The precision obtained has been evaluated based on actual results and an adjustment has been proposed with the Upper Bound to the average fuel consumptions in the project scenario in a conservative manner since the 10% precision was not met. The acceptability of the data was based on the VVB's professional judgment in line with the Sampling Standard.

All the data records for the monitoring parameters were in line with the PP's sample records and there were no discrepant records found from the PP's records. Since there were no discrepant records (0), the PP's set of records have been accepted based on the VVB's acceptance sampling. This is in line with the paragraph 33 of standard "Sampling and surveys for CDM project activities and programmes of activities" version 04.0 and hence, found appropriate.

3.5 SDG Outcomes Monitoring

For Contributions to Sustainable Development

The verification team checked the sustainable development indicator parameters during the remote audit interviews.

In Summary, it is Applus+ Certification's opinion that the monitoring of the project owner regarding to sustainability is in line with requirement of the GS4GG guideline.

As per the sustainability monitoring plan in the approved PDD, verification team evaluated all sustainable development indicators as followed in the table:

Item	Baseline estimate	Project estimate	Net benefit
SDG 3: Decent Work and Economic Growth	66.67%	8.42%	58.25%
SDG 7: Climate Action	0	2,948,254	2,948,254
SDG 13	117,066	18,800	98,266

Comparison of actual value of outcomes with estimates in approved GS PD

Item	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period
SDG 3:	100%	58.25%
SDG 7:	3,434,244	2,948,254
SDG 13:	74,835	98,266

The adequacy and compliance of the monitoring plan in the Monitoring report was found as per the requirements laid by the approved GS4GG PDD. The information flow (from data generation, aggregation, to recording, calculation and reporting) is already included under respective parameter above. The verification team has verified all the data and collected evidence as per the required monitoring frequency and found to be correct and appropriate meeting the requirements of the applied methodology and GS PDD.

In Summary, it is Applus+ Certification's opinion that the monitoring of the project owner regarding to sustainability is in line with requirement of the GS4GG guideline.

3.6 Assessment of Data and Calculation of Greenhouse Gas Emission Reductions

As a result of verification of the ER calculation process, the assessment team confirmed that all the parameters required for the determination of the emission reductions have been included in the Monitoring report Version 04 and corresponding ER calculation spreadsheets and are consistent with the applied methodology Technologies and practices to displace decentralized thermal energy consumption (TPDDTEC), version 3.1. The parameters are complete in this monitoring period.

After verifying the reported figures with the raw data sources, it's confirmed that the values of the parameters from the raw data sources are consistent with those quoted in the Monitoring Report Version 04 and corresponding ER calculation spreadsheets. The verification process for the same has been clearly described in above section of the report. See below for the detailed data:

Baseline Emissions for the SDG 13 by project activity, BE_y is calculated as:

$$BE_{b,y} = (B_{b,y,charcoal} * ((f_{NRB,y} * EF_{b,charcoal,CO2}) + EF_{b,charcoal,non-CO2}) * NCV_{b,charcoal}) + (B_{b,y,firewood} * ((f_{NRB,y} * EF_{b,firewood,CO2}) + EF_{b,firewood,non-CO2}) * NCV_{b,firewood}) + (B_{b,y,kerosene} * ((f_{NRB,y} * EF_{b,kerosene,CO2}) + EF_{b,kerosene,non-CO2}) * NCV_{b,kerosene}) + (B_{b,y,LPG} * ((f_{NRB,y} * EF_{b,LPG,CO2}) + EF_{b,LPG,non-CO2}) * NCV_{b,LPG})$$

$BE_{b,y}$ Mean emissions per stove per year for baseline scenario b during the year y in tCO2e

$B_{b,y}$ Mean consumption of fuel in baseline scenario b during year y, in tons, as per by-default factors, by household

$f_{NRB,y}$

by year

Fraction of biomass used during year y for the considered scenario that can be established as non-renewable biomass

$NCV_{b,fuel}$

Net calorific value of the fuel that is substituted or reduced

$EF_{b,fuel,CO2}$

CO2 emission factor of the fuel that is substituted or reduced

$EF_{b,fuel,non-CO2}$

Non-CO2 emission factor of the fuel that is substituted or reduced

Period	$BE_{b,y}$ (tCO ₂ e/stove/year)
AR4	23.40
AR5	23.93

Project emissions:

$$\begin{aligned}
 PE_{p,y} = & (B_{p,y, \text{charcoal}} * ((f_{NRB,y} * EF_{p, \text{charcoal}, CO_2}) + EF_{p, \text{charcoal}, \text{non-CO}_2}) \\
 & * NCV_{p, \text{charcoal}}) + (B_{p,y, \text{firewood}} \\
 & * ((f_{NRB,y} * EF_{p, \text{firewood}, CO_2}) + EF_{p, \text{firewood}, \text{non-CO}_2}) * NCV_{p, \text{firewood}}) \\
 & + (B_{p,y, \text{kerosene}} * ((f_{NRB,y} * EF_{p, \text{kerosene}, CO_2}) + EF_{p, \text{kerosene}, \text{non-CO}_2}) \\
 & * NCV_{p, \text{kerosene}}) + (B_{p,y, \text{LPG}} \\
 & * ((f_{NRB,y} * EF_{p, \text{LPG}, CO_2}) + EF_{p, \text{LPG}, \text{non-CO}_2}) * NCV_{p, \text{LPG}})
 \end{aligned}$$

Where:

$PE_{p,y}$ Mean emissions per stove per year for project scenario b during the year y in tCO₂e/stove/year

$B_{p,y}$ Mean consumption of project fuel in project scenario p during year y, in tons, and as derived from the statistical analysis conducted on the data collected during the project performance field tests

$NCV_{p, \text{fuel}}$ Net calorific value of the project fuel

$EF_{p, \text{fuel}, CO_2}$ CO₂ emission factor of the project fuel

$EF_{p, \text{fuel}, \text{non-CO}_2}$ Non-CO₂ emission factor of the project fuel

Period	$PE_{p,y}$ (tCO ₂ e/stove/year)
AR4	3.76
AR5	3.82

Leakage emissions:

$$LE_{p,y} = 0 \text{ tCO}_2\text{e/yr}$$

Emission reductions:

$$\sum_{b,p} N_{p,y} * U_{p,y} * (f_{NRB,b,y} * ER_{b,p,y,CO_2} + ER_{b,p,y,non-CO_2}) - \sum LE_{p,y}$$

Where:

$\sum_{b,p}$	Sum over all relevant (baseline b/project p) couples
$N_{p,y}$	Cumulative number of project technology days included in the project database for project scenario p against baseline scenario b in year y
$U_{p,y}$	Cumulative usage rate for technologies in project scenario p in year y, based on cumulative adoption rate and drop off rate (fraction)
ER_{b,p,y, CO_2}	Specific CO ₂ emission savings for an individual technology of project p against an individual technology of baseline b in year y, in tCO ₂ /day, and as derived from the statistical analysis of the data collected from the field tests
$ER_{b,p,y, non-CO_2}$	Specific non-CO ₂ emission savings for an individual technology of project j against an individual technology of baseline b in year y, converted in tCO ₂ /year, and as derived from the statistical analysis of the data collected from the field tests
$f_{NRB,b,y}$	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)
$LE_{p,y}$	Leakage for project scenario p in year y (tCO ₂ e/yr)

$$(f_{NRB,b,y} * ER_{b,p,y,CO_2} + ER_{b,p,y,non-CO_2}) = BE_{b,y} - PE_{p,y}$$

$$ER_y = 98,266 \text{ tCO}_2\text{e/yr}$$

3.7 Management and Operational System

The responsibilities of data measurement, collection, verifying, archiving etc. have been clearly defined in the GS PDD V10. The same practice is followed, and it is confirmed by the assessment team during the remote audit. The data related to ER calculation as well as data monitoring, collection process etc. have been internally reviewed by the management of the

Monitoring team regularly. The responsibility of each function is consistent with the monitoring plan in the GS PDD.

The information flow of each parameter has been verified by the assessment team via interviewing with responsible personnel.

It's verified during the remote audit, the monitoring procedure as well as the internal quality management and control procedures are stipulated in the PDD. The monitoring personnel have been interviewed by the assessment team and it's confirmed that the monitoring is implemented as per the procedure.

All the data and documents, either hard copies or soft copies, will be kept for two years after the end of the last crediting period or the last issuance of GS VERs for this Project, whichever occurs later.

4. REFERENCE

LIST OF DOCUMENTS	
S. No.	Document/Evidence/Reference/Web link, Version, Date
/01/	GS MR 2564 Version 01 dated 21/10/2021
/02/	GS MR 2564 Version 02 dated 27/01/2022
/03/	GS MR 2564 Version 04 dated 09/09/2022
/04/	Emission reduction Sheet version 01
/05/	GS PDD version 10
/06/	Baseline Survey Report
/07/	Usage Monitoring Survey
/08/	Project KPT
/09/	Design change
/10/	Technologies and practices to displace decentralized thermal energy consumption (TPDDTEC), version 3.1 Methodology
/11/	CDM VVS version 03 for the project activities
/12/	The Gold Standard for Global Goals "Principles and Requirement" V 1.2
/13/	Requirements and Guidelines for carrying out usage surveys for projects implementing improved cooking devices, version 2.0
14	sampling and survey for CDM project activities and program of activities, version 04.0

5. FINAL VERIFICATION STATEMENT

Applus+ Certification has been engaged by South Pole to perform the 5th periodical verification of the “Expanding access to LPG in Haiti through microfinance services”

The management of Entrepreneurs du Monde is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project’s Monitoring Plan in the GS PDD Ver. 10 and the applied methodology Technologies and practices to displace decentralized thermal energy consumption (TPDDTEC), version 3.1.

Our verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakesh accord, as well as those defined by the CDM Executive Board and Gold Standard. Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. The verification can confirm that:

- the project is operated as planned and described in the GS4GG project design document;
- the monitoring plan is as per the applied methodology;
- the monitoring in Monitoring Report is as per the PDD and the monitoring plan approved by GS4GG;
- the development and maintenance of records and reporting procedures are in accordance with the GS monitoring plan;
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately;
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements.

In our opinion, the GHG emission reductions for “Expanding access to LPG in Haiti through microfinance services” for the monitoring period 01/04/2019 to 31/03/2021 (Both days included) as reported in Monitoring Report, prepared on the basis of the project’s Monitoring Plan are fairly stated.

Based on the information we have seen and evaluated, we confirm the following statement:

Reporting period: 01/04/2019 to 31/03/2021 (Both days included)

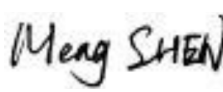
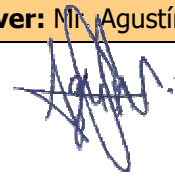
Verified emissions in the above reporting period:

Leakage emissions	0 tCO ₂ e equivalents
Project emissions	18,800 tCO ₂ e equivalents
Baseline emissions	117,066 tCO ₂ e equivalents
Emission reductions	98,266 tCO ₂ e equivalents

Date: 28/09/2022
Lead Auditor: Mr. Pankaj Kumar
Auditor: Mr. Jitendra Mohan Singh
Tech. Expert: Mr. Pankaj Kumar
Tech. Reviewer: Mr. Simon Shen

Approver (*Applus+ Certification VVB Technical Manager*)

Mr. Agustín Calle de Miguel

ASSESSMENT TEAM	
Lead Auditor: Mr. Pankaj Kumar	Technical Reviewer: Mr. Simon Shen
Signature: 	Signature: 
Approver: Mr. Agustín Calle de Miguel	
Signature: 	

**Appendix 1: Corrective Action Request/Clarification Request/Forward Action
 Request resolution table**

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	01
Raised by:	Pankaj Kumar	Ref. to checklist in above tables:	NA
Description of the audit finding		Date:	17/01/2022
- PP is requested to update the Monitoring Report as per the updated methodology REDUCED EMISSIONS FROM COOKING AND HEATING: TECHNOLOGIES AND PRACTICES TO DISPLACE DECENTRALIZED THERMAL ENERGY CONSUMPTION (TPDDTEC) version 4.0 - In section C, sales receipt is mentioned for unique identification of the stoves. Please provide the sales receipt for the same. - PP is requested to provide the below supportive documents dated June 2021 for the current monitoring period stated in section C of the MR: - Monitoring Survey - Usage survey - Project KPT - PP is requested provide the weblink of below source in section D.1 of the MR: - IPCC 2006 Vol2 Chap1 Table 1.4 - firewood, LPG and kerosene, the IPCC 2006 (Vol 2, Chap 1, Table 1.4) data have been applied - PP is requested to provide the documents stated ESMAP report "Haiti: Strategy to Alleviate the Pressure of Fuel Demand on National Woodfuel Resources" published in 2007 in section D.1 of the MR. - PP is requested to provide the supportive document The Baseline Performance Field Test (BPFT) for the parameter $P_{b,y}$ in section D.1 of the MR.			
Project Participant's response		Date:	27/01/2022
- please site the requirement in GS to change methodology during MR after already being registered under GS4GG - Receipts are being collected and will be provided as soon as they are obtained. - All supports are included in the excel sheet already shared. - Documents attached - Documents attached - Document attached under "Copie de GS2564_PDD_Dataset_2017_1_31.xlsx "			
Documentation provided as evidence by Project Participant			
- Monitoring survey, Usage survey and Project KPT documents. - ESMAP report - BPFT report			
Auditor's assessment comment		Date:	02/02/2022

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	01
Raised by:	Pankaj Kumar	Ref. to checklist in above tables:	NA
- PP has provided the design changed and registered PDD which applies TPDDTEC, ver 3.1. Hence the comment is closed. - PP has now provided the sales receipts for the unique identification of the stoves. The comment is closed. - Assessment has checked and it is found that Monitoring survey, usage survey and project KPT is provided in the ER sheet. The comment is closed now. - PP has provided the documents and the values have check by assessment team and found ok. The comment is closed. - PP has now provided the evidence Strategy to Alleviate the Pressure of Fuel Demand on National Woodfuel Resources" published in 2007. The comment is closed. - PP has now provided the The Baseline Performance Field Test and found ok by the assessment team. The comment is closed. CAR 01 is closed.			

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	02
Raised by:	Pankaj Kumar	Ref. to checklist in above tables:	
Description of the audit finding		Date:	17/01/2022
PP is requested to check and correct the value of baseline emission and project emission of SDG 13 in section E.1 in MR as per ER sheet provided to DOE.			
Project Participant's response		Date:	27/01/2022
The values were corrected as per ER sheet.			
Documentation provided as evidence by Project Participant			
ER sheet			
Auditor's assessment comment		Date:	02/02/2022
Assessment team has checked the values in MR and found corrected as per ER sheet provided. CAR 02 is closed.			

Appendix 3: Audit Team CVs

Name	SHORT CV. BACKGROUND INFORMATION
Mr. Pankaj Kumar	Mr. Pankaj Kumar has done M. Sc in Environment Management from Forest Research Institute, Dehradun and B. Sc. (Hons.) in Environment & Water Management from Magadh University, Bihar, India. He has also done Post Graduate Diploma in Environmental Law from NLSIU, Bangalore. He has more than 12 years of working experience in GHG Assessments and has participated during his career in Agencies and DOEs like MITCON, Agrinergy, Carbon Check and is empanelled with Applus+ Certification since 2015 for the performance of CDM/VCS/GS project assessments. He has extensive experience in the Renewable, Waste Management and Energy Demand Scopes of UNFCCC CDM and has done more than 100 Validations and Verifications of PAs and PoAs as Lead Auditor, Technical Expert and Technical Reviewer, mainly in Asia, Africa, USA, Asia Pacific and Americas under CDM, Verified Carbon Standard, Gold Standard & Social Carbon Standard, Brazil. He is an experienced, qualified and result oriented Environment and climate change professional having 16 yrs. of relevant experience in Climate Change (Mitigation & Adaptation), Environmental Due Diligence, Disaster Risk Reduction, Climate finance, adaptation planning, capacity building, validation and verification of GHG project. He can also provide technical support for environmental investigative, remedial projects involving air, water and soil, Waste management, EIA, Environmental Compliance, ISO 14001, OHSAS 18001, GHG accounting (ISO 14064) and Carbon foot printing.
Mr. Jitendra Mohan Singh	Jitendra Mohan Singh, has done Advanced MSc in Sustainable Energy Systems and Management from International Institute of Management, University of Flensburg, Germany and B.Tech. in Agricultural Engineering from Allahabad University, India. He has more than (18) years of working experience in different organizations like IARI, IIT Delhi, ICAR, IRADe, CAPART, SMEC and Perenia Carbon and M B Power (Madhya Pradesh) Ltd. in the area of Agriculture, Energy & Environment and Climate Change. He also worked on contract basis (adhoc) as a RIT expert in UNFCCC from 2010 to 2013. Currently, he is empanelled with Applus+ Certification since 2020 and has been involved Verifications of PAs as Lead Auditor and Technical Expert for Renewable and non-Renewable as well as Energy Demand
Mr. Simon Shen	Mr. Simon Shen has Master degree in Thermal Enrgy Engineering, Bacheor Degree in Environment Engineering) is a Lead Auditor appointed by Applus+ LGAI for the GHG project assessment. He is based in Shanghai. He has several years of work experience in environment protection field. Before he joined Applus+ LGAI, he had been worked for TUV SUD as a GHG Validator/ Assessment team and ISO 9001/ 14001 Lead Auditors for 3.5 years.