GS VERIFICATION AND CERTIFICATION REPORT

4TH PERIODIC VERIFICATION OF CP1

PEOPLE'S REPUBLIC OF BANGLADESH

GHG EMISSION REDUCTION THROUGH USE OF BONDHU CHULA (IMPROVED COOK STOVES) IN BANGLADESHP

POA GS REF. NO.: GS 3112

Report No: 8003049670 - 22/094

Date: 15/06/2023

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Verification Report:	***Report No.***		***Rev. No.***	***Date of 1st issue:***	***Date of this rev.***
	8003049670 - 22/094		3.0	13/09/2022	15/06/2023
Programme of Activities:	***PoA Title:***			***Project design certification***	***GS No.:***
	GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh			01/04/2014	GS 3112
	PoA Scale			***Verification No.:***	
	☐ Large Scale	☒ Small Scale		4th periodic verification	
	Duration of the PoA:			***From:***	***To:***
	28 years 00 months (5-yr renewable cycle)			01/04/2014	31/03/2042
	Crediting period:			***From:***	***To:***
	☐ *Renewable (5y)* ☒ *Fixed (10y)*			01/04/2014	31/03/2024
	VPA title:			***Crediting Period Start Date***	***GS No.:***
	VPA 01	VPA 1 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh		01/04/2014	GS 3544
	VPA 02	VPA 2 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh		05/05/2014	GS 3482
	VPA 04	VPA 4 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh		15/09/2014	GS 3619
	VPA 05	VPA 5 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh		15/09/2014	GS 3620
	VPA 06	VPA 6 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh		28/10/2014	GS 3618
	VPA 07	VPA 7 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh		01/08/2014	GS 4372
	VPA 08	VPA 8 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh		15/08/2014	GS 4373
	VPA 09	VPA 9 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh		27/08/2014	GS 4374
	VPA 10	VPA 10 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh		15/09/2014	GS 4375
	VPA 11	VPA 11 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh		27/09/2014	GS 4376
	VPA 12	VPA 12 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh		08/10/2014	GS 4377

	VPA 13	VPA 13 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	21/10/2014	GS 4378
	VPA 14	VPA 14 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	02/11/2014	GS 4379
	VPA 15	VPA 15 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	15/11/2014	GS 4380
	VPA 16	VPA 16 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	26/11/2014	GS 4381
	VPA 17	VPA 17 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	04/12/2014	GS 4382
	VPA 18	VPA 18 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	15/12/2014	GS 4384
	VPA 19	VPA 19 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	19/12/2014	GS 4383
	VPA 20	VPA 20 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	28/12/2014	GS 4385
	VPA 21	VPA 21 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	07/01/2015	GS 4386
	VPA 22	VPA 22 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	15/01/2015	GS 4387
	VPA 23	VPA 23 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	24/01/2015	GS 4388
	VPA 24	VPA 24 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	14/02/2015	GS 4389
	VPA 25	VPA 25 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	21/02/2015	GS 4390
	VPA 26	VPA 26 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	21/02/2015	GS 4391
	VPA 27	VPA 27 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	15/03/2015	GS 4392
	VPA 28	VPA 28 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	15/03/2015	GS 4393

	VPA 29	VPA 29 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	24/03/2015	GS 4394
	VPA 30	VPA 30 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	15/04/2015	GS 4395
	VPA 31	VPA 31 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	26/04/2015	GS 4396
	VPA 32	VPA 32 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	30/04/2015	GS 4397
	VPA 33	VPA 33 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	23/05/2015	GS 4398
	VPA 34	VPA 34 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	30/05/2015	GS 4399
	VPA 35	VPA 35 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	30/05/2015	GS 4400
	VPA 36	VPA 36 - GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh	23/06/2015	GS 4401

Project Participant(s):	***Non-Annex 1 country:***		***Annex 1 country:***	
	People's Republic of Bangladesh		-	
	PP from non-Annex 1 country:		***PP from Annex 1 country:***	
	Bangladesh Bondhu Foundation		-	
Applied methodology/ies:	***Title:***		***No.:***	***Scope(s) / TA(s)***
	The Gold Standard Simplified Methodology for Efficient Cookstoves		version 1.0	3 / 3.1
Monitoring period and monitoring report[1]	***Monitoring period (MP):***		***Monitoring Report (final):***	
	VPA 1-2 and 4-36[2] MS1 – 01/03/2018 – 28/02/2019 MS2 – 01/03/2019 – 29/02/2020		2023-05-15 v 4.0	
Verification team:	***Verification Team:***	***Technical review:***		***Final approval:***
	Prakash Kumar Mishra – TL/T	Kunal Rami		Kunal Rami
Key dates of verification:	***Publication of the workplan:***	***Remote audit***		
	2022-08-04	2022-07-08		2022-07-08
Summary of Verification opinion	Bangladesh Bondhu Foundation has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 4th periodic verification of first crediting period of the PoA titled: "GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh" **GS PoA ID-3112**, with regard to the relevant GS requirements for project activities.			

[1] The claim of the ER's are restricted to 02 years inline with maximum allowable period to be verified remotely, refer CAR 01 of this report

[2] VPA3 is not covered in this monitoring period and verification

<table>
<tr><td></td><td colspan="3">As a result of this verification, the verifier confirms that:
☒ all operations of the project are implemented and installed as planned and described in the validated project design document,
☒ the monitoring plan is in accordance with the applied approved GS methodology,
☒ the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately,
☒ the monitoring system is in place and functional. The project has generated GHG emission reductions, and
☒ the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner.
☒ the project has contributed to sustainable development.
TÜV NORD JI/CDM CP herewith confirms that the project has achieved emission reductions in the above-mentioned reporting period as listed below (verified amount).</td></tr>
<tr><td>Emission reductions: [tCO₂e]</td><td colspan="2">Total verified amount[3]
<table><tr><th>Start Dates</th><th>End Dates</th><th>VERs (tCO2e)</th></tr><tr><td>01/03/2018</td><td>31/12/2018</td><td>149,113</td></tr><tr><td>01/01/2019</td><td>31/12/2019</td><td>173,348</td></tr><tr><td>01/01/2020</td><td>29/02/2020</td><td>28,370</td></tr><tr><td colspan="2">Total</td><td>350,831</td></tr></table>The Vintagewise and VPA wise breakup is given under section 5.12 of FVR</td><td>As per VPA-DD[4]
<table><tr><td colspan="2">MS#1 and MS#2</td></tr><tr><td>Total</td><td>631,007</td></tr></table></td></tr>
<tr><td>Document information:</td><td>Filename:
22-094_FVerR-GSPoA3112_ 22-05-2023.docx</td><td>No. of pages:
88</td></tr>
</table>

[3] For VPA wise breakup, please refer section 5.15 of this FVR
[4] For VPA wise breakup, please refer section 5.15 of this FVR

Abbreviations:

BBF	**Bangladesh Bondhu Foundation**
CA	**Corrective Action / Clarification Action**
CAR	**Corrective Action Request**
CDM	**Clean Development Mechanism**
CER	**Certified Emission Reduction**
CL	**Clarification Request**
CO_2	**Carbon dioxide**
CO_{2eq}	**Carbon dioxide equivalent**
DVerR	**Draft Verification Report**
ER	**Emission Reduction**
FAR	**Forward Action Request**
GHG	**Greenhouse gas(es)**
MP	**Monitoring Plan**
MR	**Monitoring Report**
PA	**Project Activity**
PoA-DD	**Programme of Activities Design Document**
PP	**Project Participant**
QA/QC	**Quality Assurance / Quality Control**
UNFCCC	**United Nations Framework Convention on Climate Change**
VPA-DD	**Component Project Activity Design Document**
VVS	**Validation and Verification Standard**

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1. INTRODUCTION

Bangladesh Bondhu Foundation has commissioned the TÜV NORD JI/CDM Certification Program (CP) to carry out the 4th periodic verification (CP1) of the PoA titled:

"GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh"

under corresponding Programme of Activities ID GS 3112 with regard to the relevant requirements for GS project activities. The verifiers have reviewed the implementation of the monitoring plan(s) (MP) as described in the registered PoA-DD and VPA-DD.

GHG data for this monitoring period was verified in detailed manner applying the set of requirements, audit practices and principles as required under the GS regulations and the applied methodology.

Sustainable Development Indicators for this monitoring period were verified in detailed manner as required under the GS requirements/GSR/, relevant GS Annexes, and GS4GG Requirements/GS4GG TA/.

This report summarizes the findings and conclusions of this 4th periodic verification of the above-mentioned GS project activity.

1.1. Objective

The objective of the verification is the review and ex-post determination by an independent entity of the GHG emission reductions. It includes the verification of the:

- implementation and operation of the project activity as given in the respective VPA-DD,
- compliance of the actual monitoring system and procedures with the provisions of the monitoring plan as a part of registered VPA-DD, GS SDG monitoring matrix and the applied approved monitoring methodology,
- data given in the monitoring report by checking the monitoring records, the emissions reduction calculation and supporting evidence,
- accuracy of the monitoring equipment,
- quality of evidence,
- significance of reporting risks and risks of material misstatements.

1.2. Scope

The verification of VPA-DD is based on the validated Programme of Activities design document/GSPoA-DD/, the validated GS PoA / VPA Documents, the monitoring report(s)/MR/, emission reduction calculation spreadsheet/XLS/, GS4GG Requirements/GS4GG TA/, supporting documents made available to the verifier and information collected through performing interviews and during the remote assessments. Furthermore, publicly available information was considered as far as available and required.

The verification is carried out on the basis of the following requirements, applicable for this Programme of Activities:

- Article 12 of the Kyoto Protocol /KP/,
- guidelines for the implementation of Article 12 of the Kyoto Protocol as presented in the Marrakech Accords under decision 3/CMP.1 /MA/, and subsequent decisions made by the Executive Board and COP/MOP,
- other relevant rules, including the host country legislation,
- CDM Validation and Verification Standard /VVS/,
- Monitoring plan as given in the registered PoA-DD and VPA-DD(s) /GSPoA-DD/
- Approved GS Methodology/GSM/
- GS4GG Requirements/GS4GG TA/

2. GHG PROJECT DESCRIPTION

2.1. Technical Project Description of the Programme of Activities

The purpose of PoA is dissemination of efficient, improved cooking stoves (ICS) in Bangladesh. The PoA is already registered under GS Principles and requirements, applied methodology and other relevant rules and requirements established for GS4GG PoA.

The VPAs under the PoA promote installation of ICS (based on service levels):

• Domestic ICS

The replacement of traditional stoves by ICS improves heat transfer, hence reducing the total amount of wood-fuel required for cooking and reducing amount of GHG emitted into the atmosphere. This VPAs included in this report use the same technology / measure.

The improvement in efficiency is achieved by properly adjusting the dimensions of the combustion chamber and ensuring effective air flow during cooking. In comparison to traditional stoves, the ICS provide a fuel savings of ~50% to cook the same amount of food.

2.2. Technical Description of the Voluntary Project Activities (VPAs)

The Programme of Activities consists of VPA briefly as below:

GHG Emission Reduction through use of Bondhu Chula (Improved Cook Stoves) in Bangladesh – VPA No.01 to 02 and 04 to 36.

The technology implemented under this project is improved cookstoves.

The key parameters of the project are given in Table 2-1.1:

Table 2-1.1: Technical data of the VPA

Description (Technical specification)	**Domestic**
Portable/Fixed	Fixed
Fuel grate present (yes/No)	Yes
Chimney present (Yes/No)	Yes
Fuel Type	Wood-fuel
Fabrication Material	Cement concrete
Design Operational Lifetime	More than 6 years

2.3. Project Location

The details of the VPA locations are given in Table 2-2:

Table 2-2: VPA(s) Location

VPA No.: 1-36	Project Location
Host Country	Bangladesh
Region:	All across Bangladesh
Project location address:	All across Bangladesh
Latitude / longitude of program provinces:	GPS Coordinates of Dhaka is 23°42'37.44"N, 90°24'26.78"E

2.4. Project Verification History

Essential events since the registration of the PoA are presented in the following Table 2-3.

Table 2-3: Status of previous Monitoring Periods

#	Item	Time	Status
i.	PoA validation (GS) based on Design Certification Review	01/04/2014	Registered
ii.	1st Monitoring period	VPA 1 - 01/04/2014 - 30/04/2015 VPA 2 - 05/05/2014 - 30/04/2015 VPA 4 - 15/09/2014 - 30/04/2015 VPA 5 - 15/09/2014 - 30/04/2015 VPA 6 - 28/10/2014 - 30/04/2015 VPA 7 - 01/08/2014 - 31/07/2016 VPA 8 - 15/08/2014 - 31/07/2016 VPA 9 - 27/08/2014 - 31/07/2016 VPA 10 - 15/09/2014 - 31/07/2016 VPA 11 - 27/09/2014 - 31/07/2016 VPA 12 - 08/10/2014 - 31/07/2016 VPA 13 - 21/10/2014 - 31/07/2016 VPA 14 - 02/11/2014 - 31/07/2016 VPA 15 - 15/11/2014 - 31/07/2016 VPA 16 - 26/11/2014 - 31/07/2016 VPA 17 - 04/12/2014 - 31/07/2016 VPA 18 - 15/12/2014 - 31/07/2016 VPA 19 - 19/12/2014 - 31/07/2016 VPA 20 - 28/12/2014 - 31/07/2016 VPA 21 - 07/01/2015 - 31/07/2016 VPA 22 - 15/01/2015 - 31/07/2016 VPA 23 - 24/01/2015 - 31/07/2016 VPA 24 - 14/02/2015 - 31/07/2016 VPA 25 - 21/02/2015 - 31/07/2016 VPA 26 - 21/02/2015 - 31/07/2016 VPA 27 - 15/03/2015 - 31/07/2016	Issued

#	Item	Time	Status
		VPA 28 - 15/03/2015 - 31/07/2016 VPA 29 - 24/03/2015 - 31/07/2016 VPA 30 - 15/04/2015 - 31/07/2016 VPA 31 - 26/04/2015 - 31/07/2016 VPA 32 - 30/04/2015 - 31/07/2016 VPA 33 - 23/05/2015 - 31/07/2016 VPA 34 - 30/05/2015 - 31/07/2016 VPA 35 - 30/05/2015 - 31/07/2016 VPA 36 - 23/06/2015 - 31/07/2016	
iii.	2nd Monitoring period	VPA 1 - 01/05/2015 - 21/02/2016 VPA 2 - 01/05/2015 - 21/02/2016 VPA 4 - 01/05/2015 - 21/02/2016 VPA 5 - 01/05/2015 - 21/02/2016 VPA 6 - 01/05/2015 - 21/02/2016	Issued
iv.	3rd Monitoring period	VPA 1 - 22/02/2016 - 28/02/2018 VPA 2 - 22/02/2016 - 28/02/2018 VPA 4 - 22/02/2016 - 28/02/2018 VPA 5 - 22/02/2016 - 28/02/2018 VPA 6 - 22/02/2016 - 28/02/2018 VPA 7 - 01/08/2016 - 28/02/2018 VPA 8 - 01/08/2016 - 28/02/2018 VPA 9 - 01/08/2016 - 28/02/2018 VPA 10 - 01/08/2016 - 28/02/2018 VPA 11 - 01/08/2016 - 28/02/2018 VPA 12 - 01/08/2016 - 28/02/2018 VPA 13 - 01/08/2016 - 28/02/2018 VPA 14 - 01/08/2016 - 28/02/2018 VPA 15 - 01/08/2016 - 28/02/2018 VPA 16 - 01/08/2016 - 28/02/2018 VPA 17 - 01/08/2016 - 28/02/2018 VPA 18 - 01/08/2016 - 28/02/2018 VPA 19 - 01/08/2016 - 28/02/2018 VPA 20 - 01/08/2016 - 28/02/2018 VPA 21 - 01/08/2016 - 28/02/2018 VPA 22 - 01/08/2016 - 28/02/2018 VPA 23 - 01/08/2016 - 28/02/2018 VPA 24 - 01/08/2016 - 28/02/2018 VPA 25 - 01/08/2016 - 28/02/2018 VPA 26 - 01/08/2016 - 28/02/2018 VPA 27 - 01/08/2016 - 28/02/2018 VPA 28 - 01/08/2016 - 28/02/2018	Issued

#	Item	Time	Status
		VPA 29 - 01/08/2016 - 28/02/2018 VPA 30 - 01/08/2016 - 28/02/2018 VPA 31 - 01/08/2016 - 28/02/2018 VPA 32 - 01/08/2016 - 28/02/2018 VPA 33 - 01/08/2016 - 28/02/2018 VPA 34 - 01/08/2016 - 28/02/2018 VPA 35 - 01/08/2016 - 28/02/2018 VPA 36 - 01/08/2016 - 28/02/2018	
v.	4th Monitoring period	VPA 1 - 01/03/2018 - 29/02/2020 VPA 2 - 01/03/2018 - 29/02/2020 VPA 4 - 01/03/2018 - 29/02/2020 VPA 5 - 01/03/2018 - 29/02/2020 VPA 6 - 01/03/2018 - 29/02/2020 VPA 7 - 01/03/2018 - 29/02/2020 VPA 8 - 01/03/2018 - 29/02/2020 VPA 9 - 01/03/2018 - 29/02/2020 VPA 10 - 01/03/2018 - 29/02/2020 VPA 11 - 01/03/2018 - 29/02/2020 VPA 12 - 01/03/2018 - 29/02/2020 VPA 13 - 01/03/2018 - 29/02/2020 VPA 14 - 01/03/2018 - 29/02/2020 VPA 15 - 01/03/2018 - 29/02/2020 VPA 16 - 01/03/2018 - 29/02/2020 VPA 17 - 01/03/2018 - 29/02/2020 VPA 18 - 01/03/2018 - 29/02/2020 VPA 19 - 01/03/2018 - 29/02/2020 VPA 20 - 01/03/2018 - 29/02/2020 VPA 21 - 01/03/2018 - 29/02/2020 VPA 22 - 01/03/2018 - 29/02/2020 VPA 23 - 01/03/2018 - 29/02/2020 VPA 24 - 01/03/2018 - 29/02/2020 VPA 25 - 01/03/2018 - 29/02/2020 VPA 26 - 01/03/2018 - 29/02/2020 VPA 27 - 01/03/2018 - 29/02/2020 VPA 28 - 01/03/2018 - 29/02/2020 VPA 29 - 01/03/2018 - 29/02/2020 VPA 30 - 01/03/2018 - 29/02/2020 VPA 31 - 01/03/2018 - 29/02/2020 VPA 32 - 01/03/2018 - 29/02/2020 VPA 33 - 01/03/2018 - 29/02/2020 VPA 34 - 01/03/2018 - 29/02/2020 VPA 35 - 01/03/2018 - 29/02/2020	Under Issuance

#	Item	Time	Status
		VPA 36 - 01/03/2018 - 29/02/2020	

An overview of all Post Registration Changes is given in the following table.

Table 2-4: Overview Post Registration Changes

#	Changes on PoA-DD/VPA-DD	Applicable from – to / as of	MP	Type of post registration change [1)]	Description	Status[2)] / Date
	N.A.					

1) IVPAiPoA : Inclusion of component project activities in programme of activities
TDfrMP : Temporary deviation from registered monitoring plan
TDfMM : Temporary deviation from the monitoring methodology
CrVPADD : Corrections to the registered VPA-DD
PCfrMP : Permanent changes from registered Monitoring Plan
PCfMM : Permanent changes from Monitoring Methodology
CoPD : Changes to the project design of a registered PoA, or generic or specific VPA

2) Approval (by Accreditation Body) or Acceptance (by DOE)

3. METHODOLOGY AND VERIFICATION SEQUENCE

3.1. Verification Steps

The verification consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- A desk review of the carbon and SD Monitoring Reports /MR/ submitted by the client and additional supporting documents with the use of customized verification protocol /CPM/ according to the Validation and Verification Standards /VVS/
- Verification planning,
- Remote assessment,
- Background investigation and follow-up interviews with personnel of the project developer and its contractors,
- Draft verification reporting
- Resolution of corrective actions (if any)
- Final verification reporting
- Technical review
- Final approval of the verification.

3.2. Contract review

To assure that

- the project falls within the scopes for which accreditation is held,
- the necessary competences to carry out the verification can be provided,
- Impartiality issues are clear and in line with the CDM accreditation requirements

a contract review was carried out before the contract was signed.

3.3. Appointment of team members and technical reviewers

On the basis of a competence analysis and individual availabilities a verification team, consisting of one team leader was appointed.

The list of involved personnel, the tasks assigned, and the qualification status are summarized in the Table 3-1 below.

Table 3-1: Involved Personnel

	Name	Company	Function [1]	Qualification Status [2]	Scheme competence [3]	Technical competence [4]	Verification competence [5] [5]	Host country Competence	On-site visit[6]
☒ Mr. ☐ Ms.	Prakash Kumar Mishra	TN CERT GmbH	TL	SA	☒	3.1	☒	☒	☒
☒ Mr. ☐ Ms.	Kunal Rami	TN CERT GmbH	FA[B]	SA	☒	3.1	☒	☐	☐

[1] TL: Team Leader; TM: Team Member, TR: Technical review; OT: Observer-Team, OR: Observer-TR; FA: Final approval

[2] GHG Auditor Status: A: Assessor; LA: Lead Assessor; SA: Senior Assessor; T: Trainee; TE: Technical Expert

[3] GHG auditor status (at least Assessor)

[4] As per S01-MU03 or S01-VA070-A2 (such as 1.1, 1.2, …)

[5] In case of verification projects

[A] Team Member: GHG auditor (at least Assessor status), Technical Expert (incl. Host Country Expert or Verification Expert), not ETE

[B] No team member

All team members contributed to the review of documents, the assessment of the component project activities and to the preparation of this report under the leadership of the team leader.

Technical experts contributed to the assessment of special aspects of the project activity, e.g., technical or host country aspects.

Statements of competence for the above-mentioned team members are enclosed in annex 2 of this report.

All above stated auditors are Gold Standard approved auditors as per https://www.goldstandard.org/resources/approved-auditors.

3.4. Verification Planning

In order to ensure a complete, transparent and timely execution of the verification task the team leader has planned the complete sequence of events necessary to arrive at a substantiated final verification opinion.

Various tools have been established in order to ensure an effective verification planning.

Risk analysis and detailed audit testing planning

For the identification of potential reporting risks and the necessary detailed audit testing procedures for residual risk areas table A-1 is used. The structure and content of this table is given in Table 3-2 below.

Table 3-2: Table A-1; Identification of verification risk areas

[5] Please refer the delailed description of deviation DEV_299, dated 21/10/2022, explained under section 3.6

[6] Remote Audit was performed. Justification is furnished below

Table A-1: GHG calculation procedures and management control testing / Detailed audit testing of residual risk areas and random testing				
Identification of potential reporting risk	**Identification, assessment and testing of management controls**	**Areas of residual risks**	**Additional verification testing performed**	**Conclusions and Areas Requiring Improvement (including *Forward Action Requests*)**
The following potential risks were identified and divided and structured according to the possible areas of occurrence.	*The potential risks of raw data generation have been identified in the course of the monitoring system implementation.* *The following measures were taken in order to minimize the corresponding risks.* *The following measures are implemented:*	*Despite the measures implemented in order to reduce the occurrence probability the following residual risks remain and have to be addressed in the course of every verification.*	*The additional verification testing performed is described. Testing may include:* *- Sample cross checking of manual transfers of data* *- Recalculation* *- Spreadsheet 'walk throughs' to check links and equations* *- Inspection of calibration and maintenance records for key equipment* *- Check sampling analysis results* *Discussions with process engineers who have detailed knowledge of process uncertainty/error bands.*	*Having investigated the residual risks, the conclusions should be noted here. Errors and uncertainties are highlighted.*

The completed table A-1 is enclosed in Annex 1 (table A-1) to this report.

Project specific periodic verification checklist

In order to ensure transparency and consideration of all relevant assessment criteria, a project specific verification protocol has been developed. The protocol shows, in a transparent manner, criteria and requirements, means and results of the verification. The verification protocol serves the following purposes:

- It organizes, details and clarifies the requirements a CDM/GS project is expected to meet for verification
- It ensures a transparent verification process where the verifying DOE documents how a particular requirement has been proved and the result of the verification.

The basic structure of this project specific verification protocol for the periodic verification is described in Table 3-3.

Table 3-3: Table A-2; Structure of the project specific periodic verification checklist

Table A-2: Periodic verification checklist				
Checklist Item	***Reference***	***Verification Team Comments***	***Draft Conclusion***	***Final Conclusion***
The checklist items in Table A-2 are linked to the various requirements the monitoring of the project should meet. The checklist is organized in various sections as per the requirements of the topic and the individual project activity. It further includes guidance for the verification team.	*Gives reference to the information source on which the assessment is based on.*	*The section is used to elaborate and discuss the checklist item in detail. It includes the assessment of the verification team and how the assessment was carried out. The reporting requirements of the VVS shall be covered in this section.*	*Assessment based on evidence provided if the criterion is fulfilled (OK), or a CAR, CL or FAR (see below) is raised. The assessment refers to the draft verification stage.*	*In case of a corrective action or a clarification the final assessment at the final verification stage is given.*

The periodic verification checklist (verification protocol) is the backbone of the complete verification starting from the desk review until final assessment. Detailed assessments and findings are discussed within this checklist and not necessarily repeated in the main text of this report.

The completed verification protocol is enclosed in Annex 1 (table A-2) to this report.

3.5. Desk review

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

- the last revision of the PoA-DD and VPA-DD including the monitoring plan/GSPoA-DD//VPA/,
- the last revision of the validation report/VAL/,
- documentation of previous verifications/VER/
- the monitoring report(s), including the claimed emission reductions for the project/MR/,
- the emission reduction calculation spreadsheet/XLS/.
- The SD monitoring report SD Indicators monitoring/S1/,/S2/,/SD1/
- Usage Survey Records/S1/,/S2/
- GS4GG Requirements/GS4GG TA/

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

3.6. On-site assessment

As most essential part of the verification exercise, it is indispensable to carry out an inspection on site in order to verify that the project is implemented in accordance with the applicable criteria and applied methodology and registered PoA-DD and VPA-DD. Furthermore, the on-site assessment is necessary to check the monitoring data with respect to accuracy of the calculation of emission reductions. Changes to the key SDG Impact indicators and the achievement and implementation of mitigation / compensation measures are other integral parts of the on-site assessment. For this verification, "Other Means of Verification were availed" main tasks covered during the remote audit include, but are not limited to:

- an investigation of whether all relevant equipment is installed and works as anticipated.
- The operating staff was interviewed and observed in order to check the risks of inappropriate operation and data collection procedures.
- Information processes for generating, aggregating and reporting the selected monitored parameters were reviewed.
- The monitoring processes, routines and documentations were audited to check their proper application.
- The monitoring data and monitoring/usage survey data were checked.
- The data aggregation trails were checked via spot sample down to the level of the data generation.
- Competency check of the ground personnel who conducts the monitoring survey.
- Appropriateness of the data collection, sampling and reliability test for the monitored sampling parameter.
- Possibility of leakage emissions were also checked.

During the remote audit scheduled on dates 28/06/2022 to 29/06/2022, the verification team performed telephonic interviews with the project participants to confirm selected information. and to resolve issues identified in the document review.

Representatives of Bangladesh Bondhu Foundation including the operational staff of the plant were interviewed. The main topics of the interviews are summarized in Table 3-4.

Table 3-4: Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
1. Projects & Operations Personnel Bangladesh Bondhu Foundation	- General aspects of the project - Technical equipment and operation - Changes since validation / previous verification - Monitoring and measurement equipment - Remaining issues from validation / previous verification - Calibrations - Quality management system - Involved personnel and responsibilities - Training and practice of the operational personnel - Implementation of the monitoring plan - Monitoring data management

Interviewed Persons / Entities	Interview topics
	- Data uncertainty and residual risks - GHG emission reduction calculation - Implementation of SD indicators - Contribution to Sustainable Development - Procedural aspects of the verification - Maintenance - Environmental aspects - SD Indicators monitoring/S1/,/S2/,/SD1/ - Sampling approach - Usage survey/S1/,/S2/ - ER calculations
2. Monitoring Agency	- Implementation of the monitoring plan - Monitoring data management - Data uncertainty and residual risks - GS monitoring parameters - GS Usage rate Guidelines - Monitoring team competency and skills
3. ICS users	- Warranty extensions - Transfer of ownership of credits VERs to PP

The list of interviewees is included in chapter 7.4.

Remote audit assessment:

The Verification Team is following the recommendations and COVID 19: INTERIM MEASURES of the GS Board published on 06/04/2020, which allows GS-VVB's to exempt onsite audit due to COVID-19 Pandemic and related worldwide travel restrictions. As per interim measures vide RULE UPDATE: COVID 19: INTERIM MEASURES published on 06/04/2020 which sets provision to exempt mandatory onsite audit by VVB for the period up to 30 June 2022. This version 05 of the COVID 19: INTERIM MEASURES, dated 21/12/2021 extended the validity till 30/06/2022.

Sr. No	Requirement (RULE UPDATE: COVID 19: INTERIM MEASURES)	Assessment
§ 4	MANDATORY SITE VISITS BY VVBs: The Validation and Verification bodies & SustainCERT may apply following interim measures in cases where on-site inspections cannot reasonably be performed due to COVID-19 and travel restrictions.	Assessment is presented below:
4.1.1 a.	Alternative Measures relating to mandatory on-site visits for VVBs audits include: A VVB may postpone site visits for on-site inspections, taking into account the rules of relevant national and local authorities (local to the VVB offices as well as to	VVB has applied the remote audit techniques, as the site visit could not be postponed due to the GS VER delivery commitments by PP.

Sr. No	Requirement (RULE UPDATE: COVID 19: INTERIM MEASURES)	Assessment
	locality of the site visits), World Health Organization (WHO) recommendations, policies of the VVB (if any) and other relevant travel restrictions and guidance (for example, a requirement to self-isolation upon return from specific countries).	Thus, VVB has conducted assessment using other means of verification such as Telephonic Calls and Skype Calls.
4.1.1 b.	If site visit cannot be postponed due to significant impact of delaying the site visit on VVB and/or project developer due to timeline/commitment as per validation/verification or GS-VERs delivery agreement, VVB may replace mandatory on-site visits with remote audits. The audit may include but not limited to validation, verification, the inclusion of VPAs, design change review etc.	
4.2.1	In case of 4.1.1 a, the VVB shall complete the on-site inspection as normal when the COVID-19 situation eases.	Not applicable.
4.2.2 i.	In case of 4.1.1 b, the VVB shall: Use validation/verification techniques and advanced communication technology solutions to validate/verify information and compliance with applicable requirements to the extent possible, to ensure the completeness and credibility of the audit;	Please refer the above explanation on the techniques and mode of communication used to appropriately assess the implementation of the project together with credibility of the monitoring result.
4.2.2 ii.	Use means such as, but not limited to, tele/video meetings; interviews with relevant stakeholders, local authorities, project participants, persons responsible for data collections, end user and/or beneficiaries of the project; photographic evidence, video recordings; data collection. For microscale project/PoAs/VPAs using drones, satellite image (where possible); relevant documents; and other publicly available information.	
4.2.2 iii.	Transparently disclose in the audit report that - The audit is undertaken remotely and - Describe the alternative means used and justification that they are sufficient for the audit	This Verification Report has been provided with a transparent disclosure on remote site assessment including explanation on other means utilized/ applied to verify the onsite information. Please refer Annex A.1 Verification Protocol of this report. The submission of this performance review is within relaxation period.
4.2.2 iv.	Must submit the audit report requesting design certification and/or performance certification within Six (6) months of the declared end date of the Interim Measures.	Refer above explanation
4.3.1	The maximum monitoring period that VVB can verify based on remote audit (paragraph 4.1.1 b) is two years.	Refer above explanation

Deviation Request approval: DEV_299
A deviation was requested on date 20/07/2022, which was subsequently approved withj reference date: DEV_299 and approval date 21/10/2022. The deviation allowed the performance of the verification covering the monitoring period from 01/03/2018 to 28/02/2021.

The deviation was basically following the previously approved deviation DEV_163 in conjunction with the latest rules regarding verification site visits. The DEV_163 was requested in Nov 2020 after series of email discussions between the project developer and SustainCert and Gold Standard with one of the key requests that no verification was conducted since 2016 and its bearing on the retroactive crediting period .

This deviation was sought by the project developer as a desperate attempt to revive the PoA which was stranded for last 5 years due to a carbon market forces. The VVB noted that CME has reported that the last verification for the PoA (and concerned VPAs) was concluded in 2016 and no verification site visits could be made thereafter (although the project continued with annual monitoring frequency). The deviation thus sought an exemption from the 3-year verification cycle requirement, albeit for the retroactive period 2016-till date of deviation approval with the plan of regularizing the verification site visits for subsequent monitoring periods thereafter.

Applied Other Credible means of verification:
The credible other means of verification is applied to cross check on-ground information as described below

Telephonic Call: During the telephonic assessment, the selected end users were interviewed and records for individual end user records, submitted by PP, were verified. The telephonic calls were recorded, stored and maintained so that the assessments of the Verification Team are traceable and reproducible if required.

Skype Calls: This tool has allowed connecting multiple stakeholders such as PP, project developer/ consultant, relevant personnel from Usage survey team and all other relevant persons as per the organogram of the PDD including QA/ QC key personnel. The VT could virtually verify the implementation of the project against the requirements in the most recent version of PDD and interviews with all the above-mentioned parties including sampled end users using this tool.

Furthermore, the data collected during the above steps are further utilized for assessments which is described in relevant parts of the Verification Report

The sampling approach conducted is in accordance with “Guidelines for Sampling and Surveys for CDM Project Activities and Programme Activities” version 04.0 and the “Standard for Sampling and Surveys for CDM Project Activities and Programme Activities version 08.0”. As the population is relatively homogeneous (for a given stove type) with respect to the object of the sampling effort, simple random sampling method is adopted for verification of the parameters.

3.7. Draft verification reporting

On the basis of the desk review, the remote-site assessment, follow-up interviews and further background investigation the verification protocol is completed. This protocol together with a general project and procedural description of the verification and a detailed list of the verification findings form the draft verification report. This report is sent to the client for resolution of raised CARs, CLs and FARs.

3.8. Resolution of CARs, CLs and FARs

Non-conformities raised during the verification can either be seen as a non-fulfilment of criteria ensuring the proper implementation of a project or where a risk to deliver high quality emission reductions is identified.

Corrective Action Requests (CARs) are issued, if:

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

The verification team uses the term Clarification Request (CL), which is be issued if:

- information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

Forward Action Requests (FAR) indicate essential risks for further periodic verifications. Forward Action Requests are issued, if:

- the monitoring and reporting require attention and / or adjustment for the next verification period.

For a detailed list of all CARs, CLs and FARs raised in the course of the verification pl. refer to chapter 4.

3.9. Final reporting

Upon successful closure of all raised CARs and CLs the final verification report including a positive verification opinion can be issued. In case not all essential issues could finally be resolved, a final report including a negative verification opinion is issued.

The final report summarizes the final assessments w.r.t. all applicable criteria.

3.10. Technical review

Before submission of the final verification report a technical review of the whole verification procedure is carried out. The technical reviewer is a competent GHG auditor being appointed for the scope this project falls under. The technical reviewer is not considered to be part of the

verification team and thus not involved in the decision-making process up to the technical review.

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

3.11. Final approval

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

After this step the request for issuance can be started.

4. VERIFICATION FINDINGS

In the following paragraphs the findings from the desk review of the monitoring report/MR/, the calculation spreadsheet/ER/, PDD/PDD/, the Validation Report/VAL/ and other supporting documents, as well as from the on-site assessment and the interviews are summarised.

The summary of CAR, CL and FAR issued are shown in Table 4.1:

Table 4.1: Summary of CAR, CL and FAR

Verification topic	No. of CAR	No. of CL	No. of FAR
A – Description of project activity	0	0	0
B – Implementation of project activity	0	0	0
C – Description of Monitoring System	2	1	0
D – Carbon Data and Parameters	1	0	0
E - Calculation of Emission Reductions	1	0	0
F – Sustainability Monitoring Parameters	1	0	0
SUM	**05**	**01**	**00**

The preliminary findings of the verification process based on desk review are summarized in the tables below.

Table 4.2 : Remaining FAR from validation and/or previous verification

No FARs

Table 4.3: CL from this verification

Finding	1		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section D.2, it is observed that the number of ICS distributed in this monitoring period (MP#4) is same as last MP#3 which is 183,882. This is not consistent with the estimated as envisaged during registration. Clarification requested.		

Finding	1		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details. In case the MR is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.*	During the concerned monitoring period, no new ICS have been installed. The installation database and the number of ICS claiming credits remain same as that approved in the last Monitoring period. The MR contains ~183k number of ICS which is lesser than the number of ICS specified in the registered VPAs (~325k) and is conservative. Further, the Verification team has been provided with end user details of each of the 183,882 ICS along with its unique serial number and date of installation to substantiate that the number of ICS being credited is correct, accurate, real and measured with no risk of double counting.		
	☐ Changes in MR	Section(s):	New version No.:
	☐ Changes in XLS	Worksheet(s): Usage Data	New version No.:
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The number of ICS in the last and the present verification are one and the same. The PD during the interviews has confirmed that there was no new sale of the ICS during the reporting year. Thus, explanation is accepted. The VVB also acknowledge that the number of ICS installed are less than the estimated ICS installations. CL has been CLOSED.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Table 4.4: CAR from this verification

Finding	1		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Following inconsistencies observed between Submitted ER and MR 1. Unit of parameters $f_{NRB,y}$, η_b , η_p are inconsistent with ER worksheet Refer tab (Default Parameters) 2. Under section E.2 of MR, project estimate values (MS1, MS2, MS3) for SDG 13 are inconsistent with ER worksheet (refer tab "Inst summary and ER calculation" Column F, I and L). 3. The PD is claiming the ER's for MS1, MS2 and MS3 (i.e 3 years), however, as per GS rules, emissions reductions upto 02 years can be verified remotely.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details. In case the MR is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.*	1. Unit of parameters $f_{NRB,y}$ η_b , η_p have been updated in ER sheet (Default Parameters) tab. The units in the revised ER worksheet and MR are now consistent with each other. 2. MR is consistent with the ER sheet. Please refer cell N40, Q40 of the ER worksheet (refer tab "Inst summary and ER calculation" which correctly reflects the ERs achieved during the monitoring period. The information in column F, I and L in the ER calculator has been rectified. 3. The COVID Interim measures restricts the duration of monitoring period, that may be verified remotely, to two years. Thus, the ER sheet and MR have been revised to claim ERs for a two-year period (i.e. from 01 Mar 2018 – 29 Feb 2020).		
	☒ Changes in MR	Section(s): D.1, E.2	New version No.: 2.0

Finding	1		
	☒ Changes in XLS	Worksheet(s): tab - Default Parameter, tab - Inst summary and ER calculation	New version No.: 2.0
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	1. The VVB has reviewed the units of parameters ($f_{NRB,y}$ η_b, η_p) in MR and ER worksheet (tab: Default Parameters) and found consistent. 2. The VVB has crosschecked project estimate values for MS1 and MS2 (SDG 13) under section E.2 of MR and found consistent with the values (cell N40, Q40 (refer tab "Inst summary and ER calculation") of the ER worksheet. 3. Explanation is accepted. Submitted MR and ER now consider period of two years (MS1 from 01-03-2018 to 28-02-2019 and MS2 from 01-03-2019 to 29-02-2020). CAR is CLOSED.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	2		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Following finding raised with reference to GS template filling guideline (Refer https://globalgoals.goldstandard.org/standards/TGuide-PerfCert_V1.1-Monitoring-Report.pdf) 1. Monitoring period number is not reflecting the corresponding CP. Also, Duration of MP is not reported as per dd/mm/yyyy format. 2. Section A.3 of MR lacks information on methodological tools and standardized baselines. 3. The length of total crediting period is missing under section A.4 of MR 4. Section E.1, E.2 and E.3 of MR, lacks sample calculations for all formulae used to calculate/estimate baseline/project values. In addition, sample calculation is missing under section E.4. 5. Spreadsheets reference are missing in section E.1, E.2 and E.4 of MR.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details. In case the MR is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.*	1. The crediting period corresponding to the monitoring period has been now indicated in the revised MR. 2. No Methodological tools or standardized baselines have been applied in the PoA or the concerned monitoring period. Thus, Section A.3 of MR is deemed correct. 3. The crediting period start date, end date and the length has been specified in section A.4 of the revised MR for each VPA. 4. Referred Sections have been revised accordingly. 5. Spreadsheets references have been included in section E.1, E.2 and E.4 of MR.		
	☒ Changes in MR	Section(s): A.3, A.4, E.1, E.2, E.4	New version No.: 2.0
	☒ Changes in XLS	Worksheet(s): SDG Parameters Assessment	New version No.: 2.0

Finding	2
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	1. Revised MR includes corresponding crediting period i.e CP1 2. Ok. Accepted. 3. The VVB confirms that the section A.4 of MR is revised with respect to crediting period start date, end date and length. 4. The sample calculations are provided and verified. The VVB confirms that sample calculations for all formulae used to calculate/estimate baseline/project values. In addition, sample calculation under section E.4 are referred to ER calculator. The results under verified with the ER clauclator for consistency. 5. Spreadsheet references is now updated section E of MR. Please also refer closure under point 4 above.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	3		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	1. Footnote 1 under section A.2 of MR, is not providing the required information. Further, the reported GPS of Dhaka is not traced from google. Supportive is requested for the GPS provided. 2. In section B.1 (part C) Monitoring period is not reflecting corresponding Monitoring sessions.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details. In case the MR is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.*	1. Footnote 1 under section A.2 of MR is now updated with the working weblink. Also, another footnote has been added as supporting evidence for the GPS co-ordinates of Dhaka. 2. The header of the table in section B.1 (part C) has been updated to reflect the corresponding monitoring sessions.		
	☒ Changes in MR	Section(s): A.2, B.1	New version No.: 2.0
	☐ Changes in XLS	Worksheet(s):	New version No.:
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	1. The provided links are working and GPS of Dhaka can be traced from it. 2. The VVB checked the table in section B.1 (part C) and confirms that it is now reflecting the corresponding monitoring sessions. CAR is CLOSED.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	4		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding	1. Phone Numbers are missing in all Survey Forms as well as ER Sheet for Samples of MS1, MS2 and MS3.		

Finding	4
Describe the finding in un-ambiguous style; address the context (e.g. section)	2. Name of User / Respondent of following MS1 Samples: "LOS-GOP-MUK-KHA-D-324, RID-KUS-KUS-W010-D-147, TS4-NRL-KAL-ELI-D-262, VOR-FAR-NAG-JOS-D-360" are inconsistent between Survey Forms and ER Sheet. 3. Name of User / Respondent of following MS2 Samples: "KS3-SAT-TAL-KHK-D-425, MAB-BAG-CHI-SIB-D-272" are inconsistent between Survey Forms and ER Sheet. 4. Name of User / Respondent of following MS3 Samples: "SS4-JES-MON-VOJ-D-702" are inconsistent between Survey Forms and ER Sheet. 5. Address of the User / Respondent of following MS3 Sample: "MA1-SAT-TAL-ISL-D-839" is inconsistent between Survey Form and ER Sheet. 6. Phone Numbers of 47508 end-users are missing in the installation database. 7. 28 end-users are having symbols in their phone number in the installation database. 8. Inconsistency is identified when the installation database and the survey form were compared justification is also requested for the repetition in the names of the end users within the end user database.
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details. In case the MR is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.*	1. Please note that all surveys were conducted physically. The project ICS being fixed type, cannot move or change location once installed. At the time of installation, ICS address is captured to trace it in field later, for monitoring purposes. Thus, the phone number of end user is not imperative to trace the ICS in the field ex-post. Also, the ICS beneficiaries often do not possess phone or are unwilling to share their phone numbers due to privacy concerns. Lastly the monitoring plan does not mandate capturing ICS users' phone numbers. 2. The ER sheet has been corrected. 3. The ER sheet has been corrected. 4. MS3 is no more covered in the MR. 5. MS3 is no more covered in the MR. 6. As explained in 1 above, phone number for all installations in the database may not be available. 7. Kindly refer the submitted "GS 3112 MP#4 Installation Database v1.0 29042022" which is the final version of installation database applicable. The same database was submitted in previous monitoring period as well given no new ICS have been installed in this monitoring period. The database does not contain any phone number errors 8. Q. No 1.3 of the monitoring survey questionnaire seeks the name of User / Respondent who is the primary cook in the sampled household. The installation database on the other hand refers to the head of the household, as reported at the time of installation. The user / respondent, during survey, may be different from the ICS owner listed in the installation database. Usually, the ICS owner is the head of the family / owner of the property, who may not be available at home at the time of survey or otherwise, might not be a suitable choice for collecting usage feedback (not being the primary cook). Further, the project ICS bears a unique serial number, are fixed type and have complete address details. Thus, there is no risk

Finding	4		
	to double counting of the ICS. Lastly, during the on-site audit, the relationship between the user/respondent and the owner listed in the installation database was checked by the V/V team and they were found to be closely related. The repetition of names in the database does not indicate stove stacking. Firstly, the CME installed only one ICS per household. For each ICS in the database, the end user information includes father/husband's name, para/holding, village/district information. While names in the database may be common, when they are clubbed with father/husband's name and/or address, the combination is rendered unique, thereby substantiating no risk of double counting.		
	☐ Changes in MR	Section(s):	New version No.:
	☐ Changes in XLS	Worksheet(s): Usage Data	New version No.:
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	1. Accepted, the surveys were performed physically. Finding has been CLOSED. 2. ER worksheet is verified and deemed as appropriate. 3. ER worksheet is verified and deemed as appropriate. 4. MS3 is taken out from calculation, finding has lost its relevance. 5. MS3 is taken out from calculation, finding has lost its relevance. 6. Accepted. 7. The data is now compared with the latest version of the database, the VVB has verified the same. The finding has been CLOSED. 8. The interview was conducted and the primary cook was interviewed. The VVB also confirms that the stoves are booked in the name of the "Head of Family". The VVB also reconfirmed that as per the scheme only one stove per house hold can be allotted because of the rule as well as the size of stove which require civil work for installation. All the issues are resolved. CAR has been CLOSED.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	5		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	**Below Documentary evidences are requested** 1. Sales Statement confirming monthly sales during this monitoring period 2. Sample warranty certificate 3. Declaration of Employment 4. Sample Bondhu Chula Customer Agreement Form for MS#1, MS#2 and MS#3		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details. In case the MR is changed as part*	1. No ICS installation took place in the concerned monitoring period. Hence, this is not applicable. 2. Sample "Bondhu Chula Customer Agreement" is being submitted. The warranty conditions are stated in the same. 3. Declaration of Employment has already been submitted to the VVB. Please refer "HR Records".		

Finding	5		
of the CA, the PP is requested to indicate the revised sections as well as the new version No.	4. Sample copies of Bondhu Chula Customer Agreement Form each for MS#1, MS#2 are being submitted.		
	☐ Changes in MR	Section(s):	New version No.:
	☐ Changes in XLS	Worksheet(s): Usage Data	New version No.:
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	1. Ok Accepted 2. Provided 3. Provided 4. Provided CAR is CLOSED.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Table 4.5: FAR from this verification

N/A

5. SUMMARY OF VERIFICATION ASSESSMENTS

The following paragraphs include the summary of the final verification assessments after all CARs and CLs are closed out. For details of the assessments pl. refer to the discussion of the verification findings in chapter 4 and the verification protocol (Annex 1).

5.1. Involved Parties and Project Participants

The following parties to the Kyoto Protocol and project participants are involved in this project activity.

Table 5-1: Project Parties and project participants

Characteristic	Party	Project Participant
Non-Annex 1	Bangladesh	Bangladesh Bondhu Foundation
Annex 1	NA	NA

5.2. Implementation of the project

During the applied verification, a remote site visit was carried out on 28/06/2022 to 29/06/2022 covering the monitoring period of

VPA 1 to 2 and 4 to 36

MS1 – 01/03/2018 to 28/02/2019

MS2 – 01/03/2019 to 29/02/2020

Based on this remote site visit and the reviewed project documentation, it can be confirmed that w.r.t. the realized technology, the project has been implemented and operated as described in the registered PoA-DD, VPA-DD.

This 4th monitoring period of CP1 is covering MS1 and MS2 for VPA 1 to 2 and 4 to 36 as stated above.

All the VPAs included in the monitoring report are micro-scale VPAs and have been implemented by the Bangladesh Bondhu Foundation. All VPAs involve installation and maintenance of domestic improved cooking stoves ("ICS" branded as Bondhu Chula) in Bangladesh. Till the end of the applied monitoring period 183,882 domestic units are installed/DB1,DB2/. Details of ICSs as stated in section D.2 of MR/MR/ are verified and cross checked with spreadsheet data (tab: "Inst summary and ER calculation")/ER/ and found as deemed appropriate.

The verification team was able to confirm that the project is implemented in accordance with the project description contained in the registered GS PDD/GSPoA-DD/. The verified sales breakdown is tabulated below:

CPA	Total number of domestic ICS
VPA 01 – GS 3544	9,029
VPA 02 – GS 3482	8,623
VPA 04 – GS 3619	9,083
VPA 05 – GS 3620	8,837
VPA 06 – GS 3618	8,656
VPA 07 – GS 4372	3,425

VPA 08 – GS 4373	4,354
VPA 09 – GS 4374	2,943
VPA 10 – GS 4375	3,424
VPA 11 – GS 4376	2,350
VPA 12 – GS 4377	4,507
VPA 13 – GS 4378	3,744
VPA 14 – GS 4379	6,266
VPA 15 – GS 4380	3,882
VPA 16 – GS 4381	3,082
VPA 17 – GS 4382	4,705
VPA 18 – GS 4384	2,843
VPA 19 – GS 4383	4,330
VPA 20 – GS 4385	3,801
VPA 21 – GS 4386	7,622
VPA 22 – GS 4387	5,332
VPA 23 – GS 4388	5,799
VPA 24 – GS 4389	4,793
VPA 25 – GS 4390	619
VPA 26 – GS 4391	5,968
VPA 27 – GS 4392	1,642
VPA 28 – GS 4393	3,966
VPA 29 – GS 4394	8,834
VPA 30 – GS 4395	5,211
VPA 31 – GS 4396	6,449
VPA 32 – GS 4397	9,038
VPA 33 – GS 4398	2,027
VPA 34 – GS 4399	287
VPA 35 – GS 4400	9,192
VPA 36 – GS 4401	9,219
Total	**183,882**

The verification team can thus confirm the accuracy of the stated values in the emission reduction calculations.

As per the ex-ante calculation by VPA-DD, estimated emission reduction equivalent to the monitoring period **631,007 tCO_2e** (for applied monitoring period). However, the actual occurred emission reduction as per the MR/MR/ submitted for verification are **350,831 tCO_2e**.

5.3. Project history

During the validation, the validating DOE might have raised issues that could not be closed or resolved during the validation stage. For this purpose, FARs might have been raised. All FARs raised during the validation (under GS)/VAL/ have been addressed by the verifying DOE during the previous verifications.

GS review of previous MP:

Based on the review of the validation report and GS Design review report/GSPoA-DD/, the VVB assessed and found no pending FAR applicable to this verification/VER/.

5.4. Post registration changes

No post registration changes applicable for this monitoring period have been observed.

5.5. Compliance with the monitoring plan

The monitoring system and all applied procedures are in compliance to monitoring plan of the registered PoA-DD/VPA/, VPA-DD/GSPoA-DD/. Evidence was available to the verification team to check the compliance of the monitoring plan.

The reporting procedures reflect the requirements of the monitoring plan for the carbon monitoring and sustainability development criteria. All relevant data stored is for the whole monitoring period and traceable to the computer server at the PP office and database records.

5.6. Compliance with the monitoring methodology

The monitoring system is in compliance with the applied monitoring methodology "The Gold Standard Simplified Methodology for Efficient Cookstoves, Version 1.0/GSM/.

5.7. Carbon Monitoring parameters

During the verification all relevant monitoring parameters 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. The results as well as the verification procedure are described parameter-wise in the project specific verification checklist.

Data and parameters monitored:

<table>
<tr><th>Parameter</th><th colspan="3">Monitored Value</th><th>Verification Opinion</th></tr>
<tr><td rowspan="4">$U_{p,y}$ (Usage rate in project scenario p during year y)</td><td rowspan="2">MS1</td><td>3-4 years</td><td>0.9515</td><td rowspan="4">The Usage rate of ICS was determined by conducting monitoring survey, in line with applied version of methodology and the registered monitoring plan. The survey is conducted with the help of monitoring forms. The VVB has verified the form entries with the Usage rate calculation and assessed the calculations. Values applied in ER calculator and MR are consistent. The parameter is monitored and recorded annually. The measuring frequency is as per the monitoring plan and monitoring methodology. The calculation of the Usage Survey was found inline (refer ER worksheet, tab: "Sample Size cal and results").</td></tr>
<tr><td>4-5 years</td><td>0.9439</td></tr>
<tr><td rowspan="2">MS2</td><td>4-5 years</td><td>0.9412</td></tr>
<tr><td>5-6 years</td><td>0.9320</td></tr>
</table>

<table>
<tr><th>Parameter</th><th>Monitored Value</th><th>Verification Opinion</th></tr>
<tr><td></td><td></td><td>The key personnel of monitoring survey were interviewed on procedures and associated training.</td></tr>
<tr><td>$N_{p,y}$ (Cookstove in the project database for project scenario p through year y)</td><td>
<table>
<tr><td>MS1</td><td>3-4 years</td><td>59,438</td></tr>
<tr><td></td><td>4-5 years</td><td>124,444</td></tr>
<tr><td>MS2</td><td>4-5 years</td><td>59,438</td></tr>
<tr><td></td><td>5-6 years</td><td>124,444</td></tr>
</table>
</td><td>The parameter is monitored for calculation of baseline emissions or baseline net GHG removals by sinks. The number of ICS installed is tracked through ICS Installation Database and recorded appropriately. The monitoring (at time of installation) involves the recording ICS type, ICS unique serial number, Date of installation, End user details, address, location etc. The CPA implementer excludes the subsequent ICS from the ER calculations, in case an existing Bondhu Chulha is found at the household, thus ensuring that only one project device is credited per household. This is verified by the Assessment Team. The verification team remotely pulled the end user agreement records and compared the details with the information in the provided ICS installation database. Furthermore, the team randomly selected households from the database to compare in the database with the actual stoves being used. The way of recording all stoves data (including end user detail) complies with the registered monitoring plan. Besides, the date of sampled end users (interviewed during the remote assessment) was also compared with the ICS database. No inconsistency was identified.</td></tr>
<tr><td>$DF_{b,stove,y}$ (Discount factor to account for the baseline stove use in project scenario during the year y)</td><td>
<table>
<tr><td>MS1</td><td>3-4 years</td><td>0.0270</td></tr>
<tr><td></td><td>4-5 years</td><td>0.0315</td></tr>
<tr><td>MS2</td><td>4-5 years</td><td>0.0337</td></tr>
<tr><td></td><td>5-6 years</td><td>0.0382</td></tr>
</table>
</td><td>This parameter is used for the calculation of baseline emissions or baseline net GHG removals by sinks. It is calculated on the basis of survey calculated annually, with measuring frequency as per the monitoring plan. The parameter is calculated by taking proportion of number of meals cooked using the baseline stove/ total number of meals.</td></tr>
</table>

Parameter	Monitored Value	Verification Opinion
		The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied). The survey forms were verified by the Verification Team and deemed as complete and relevant with respect to the monitoring requirements.

After appropriate corrections were made by the project participant, it can be confirmed that all monitoring parameters have been measured / determined without material misstatements and in line with all applicable standards and relevant requirements.

Data and parameters not monitored:

The ex-ante parameters stated in under section D.1 of MR/MR/ are derived from the registered VPA-DD. The ex-ante data will be applicable for the respective crediting periods for each VPA. The ex-ante fixed parameters have been correctly applied in the emission reductions calculation for this monitoring period.

5.8. Monitoring report(s)

A GS Monitoring Report/MR/ along with relevant supporting documents was submitted to the verification team by the project participants. These documents form the basis for the verification opinion of TÜV NORD.

During the verification, mistakes and needs for clarification were identified. The PP has carried out the requested corrections so that it can be confirmed that the Monitoring report is complete and transparent and accordance with the registered VPA-DD/VPA/, the GS PoA /GSPoA-DD/ and relevant GS requirements.

5.9. Sampling

5.10. Implementation of the sampling plan

The PP's sampling plan for determining various monitoring parameters is based on the requirements in the applied methodology "The Gold Standard Simplified Methodology for Efficient Cookstoves, Version 1.0, dated February 2013 and Guideline for sampling and survey which prescribes the desired level of confidence / precision (95/10 for single sample tests) for ex-post monitoring. The sample size for monitoring parameters were appropriately calculated as described below:

PP has monitored the parameters of interest under the project activity through a Random Sample Group (RSG). The size of the sample group was selected to ensure the parameters measured satisfy 95/10 precision (95% confidence interval and 10% margin of error), adhering to the requirements under the applied methodology.

Project has a large number of technology units, huge distribution area and many numbers of years coupled with the project. Along with data captured in Sales Record, further contact details are compiled for a subset of stove customers in a Customer Sampling Record. The Customer Sampling Record is used for customer follow-up and sampling for monitoring surveys.

Monitoring Usage Survey

The "The Gold Standard Simplified Methodology for Efficient Cookstoves, Version 1.0, dated February 2013 states that monitoring surveys should be carried out annually, beginning one year after project registration. The monitoring survey has the same sample size requirements as the baseline survey;

For determining the usage rate of the project technology (ies) via usage surveys, PP followed the sampling size requirements as given by the methodology on page 10[7].

The sample size for usage survey were determined, applying the following approach;

- Group size < 300: Minimum size 30 or population size, whichever smaller
- Group size 300-1000: Minimum sample size 10% of group size
- Group size > 1000: Minimum sample size 100

Besides, as required by the methodology (page 24) and as recommended by GS via the approved deviation, the PP ensured that minimum 210 samples for MS 1 and 205 samples for MS2 are covered for monitoring. If there is any shortfall from the minimum number of samples for any age category (40 samples), the shortfall sample gap has been considered as non-operational for that category as a conservative measure. This approach is deemed acceptable as conservative. The reliability assessment of the survey results shows that the precision attained is within the required level of 10% and is deemed statistically acceptable.

Particular	Monitoring results and Reliability Check – Usage			
	MS1		MS2	
Age →	3-4 years	4-5 years	4-5 years	5-6 years
Number of samples	103	107	102	103
Usage Measured	0.9515	0.9439	0.9412	0.9320
Standard Error of Usage	2.12%	2.22%	2.33%	2.48%
Relative Precision	4.36%	4.62%	4.85%	5.21%
Result	Ok passed	Ok passed	Ok passed	Ok passed

Usage survey respondents were selected as mentioned above. All the interviews were conducted following the other means of verification at respondent's home. Responses were then analyzed based on averages, allowing population trends to be established and reported on. A total of 415 surveys were conducted and have been used for the results.

[7] The project monitoring survey has the same sample size requirements as given for the baseline survey in the methodology.

Usage Survey

As stipulated in the methodology and that recommended by GS via the approved deviation a Usage Survey needs to be conducted on a minimum sample size of 100, with at least 40 samples for project technologies of each age being credited. Minimum requirement of 40 project stoves from each age group under crediting were attempted and included usage parameter is weighted based on the proportion of technologies in the total sales records of each age group and result in the emission reduction calculation spreadsheet (tab: Monitoring Summary MS1, Monitoring Summary MS2) assessed to appropriately presented.

Usage Survey was conducted on a total of 210 (103 stoves for 3-4 years and 107 stoves for 4-5 years) stoves covering each age groups of stoves under crediting for MS1 and 205 (102 stoves for 4-5 years and 103 stoves for 5-6 years) stoves covering each age groups of stoves under crediting for MS2. The total population under the survey are:

183,882 (59,438 stoves for 3-4 years and 124,444 stoves for 4-5 years) for MS1 and 183,882 (59,438 stoves for 4-5 years and 124,444 stoves for 5-6 years) for MS2 and achieved usage rate for the monitoring period for MS1 (3-4 years is 95.15% and 4-4 years is 94.39%) and for MS2 (4-5 years is 94.12% and 5-6 years is 93.20%) as verified from the GS 3112 MP#4 ER calculator v2.0 21072022.xlsx spreadsheet (integrated into ER Worksheet under Tab “Sample Size cal and results”). The detailed calculation is presented in GS 3112 MP#4 ER calculator v2.0 21072022.xlsx spreadsheet (integrated into ER Worksheet under Tab “Sample Size cal and results”) which was assessed to be appropriate by the verification team. The VVB noted that the PP arrived at the lowest “Usage Rate Fraction” between the MP#1, MP#2 and MP#3. The arrived Usage Fraction for MS1 and MS2 is most conservative.

Furthermore, the reliability test conducted for the parameters monitored and were assessed to be appropriately conducted and found to be complying with the precision requirement (95/10) and in accordance with applied methodology and Guidelines for sampling and survey version 04.0.

Based on above and sectoral and local expertise, verification team can confirm that the sampling approach is in accordance with the requirements of applied methodology and Standard for sampling and surveys for GS Project Activity and VPA-DD version 09 and “Guidelines for sampling and surveys for GS project activities and programme of activities (version 04.0). Furthermore, based on review of the ex-post monitoring survey records verification team confirms that the sampling surveys appropriately covered end users of improved cook stoves technologies in household’s purposes in the host country of Bangladesh. Thus, the survey design covers the regional distribution of the population (within the geographical boundary) and is representative of actual population for improved cookstoves technologies in household user groups.

5.11. Sampling approaches during verification

The verification team followed the “Standard for Sampling and Surveys for GS Project Activities and Programme Activities” version 09, para 29 to 32 and 39, esp. for taking sample out of the CME’s sample. Verification team has adopted the acceptance sampling approach (AS) in accordance with § 29, 30, 31 to 32 and 39 of the Sampling Standard. The verification Team checked provisions of the para 39 of the applied standard to apply the producer risk and consumer risk following the provision of para 39 as assessed below:

Statement of para 39:

A DOE may select a different sample size than the one indicated in paragraph 32 above, either by choosing a different value for the consumer risk and producer risk (e.g. 20 per cent for the consumer risk) when applying acceptance sampling or by using another approach, if any of the following conditions apply		
Sr. No.	**Requirement of para**	**DOE Assessment**
a)	The estimated volume of annual GHG emission reductions of the project activity or the PoA being verified is equal to or less than 100,000 t CO_2 eq.;	Not Applicable.
b)	The project activity or the PoA is located in a least developed country or a host Party with 10 or fewer registered CDM project activities at the end of the monitoring period being verified	The PoA is located in the LDC i.e. Host Country Bangladesh as per https://unfccc.int/topics/resilience/workstreams/national-adaptation-programmes-of-action/ldc-country-information

Following the provisions stipulated under of § 39 of "Standard for Sampling and Surveys for CDM Project Activities and Programme Activities" version 09, the VT is considering AQL 0.5 % and UQL 20%, Producer risk of 10% and consumer risk of 20% for determination of the sample size to be verified for remote audit assessment. Considering the above § under applied sampling standard, the VVB should have verified 8 samples under the acceptance sampling approach with acceptance) number 0. The verification team has verified total of 8 sampled end users for MS1 and 8 sampled users for MS2 from user sample, which were over and above to further verify the project implementation on ground across the entire vintage under crediting during current monitoring period. Project usage survey samples were randomly selected (from PP samples) by Verification Team. The sampled end users and other documentary evidences demonstrating implementation of the project ICS, continuous use of baseline stove (if any), and also confirmation on the usage rate of project and baseline devices have been reconfirmed during telephonic/ skype call/ interview with the end user. The list of the end users verified through video recording and telephonic/ skype call is presented under section above (section D.3).

During the remote assessment, TÜV NORD selected the following approach:

From the observations / results from MS1 – 8, MS2 – 8 verified ICS, the following could be confirmed:

1. The usage rate of cook stoves technologies in households (domestic use);
2. Living conditions with improved stoves over conventional unimproved stoves;
3. Reduce usage of wood/charcoal;
4. SD aspect as per the registered GS project Passport;

AQL	0.5%
UQL	20%
Producer risk	10%
Consumer risk	20%
Required Minimum Sample size	08
Acceptance Number	0
Total samples covered	MS1 – 8, MS2 – 8 (from Usage survey) (16)

No PP sampling-based monitoring records/data results were found discrepant during the VVB verification remote onsite audit. All the 08 samples of MS1 and 8 samples of MS2 verified samples remotely interviewed were found to be in compliance and adherence with the PP's monitoring. Based on the assessment of remotely assessed samples, telephonically interviewed end users, it could be confirmed that the result presented for continuous use of baseline stoves (CU), usage survey, are reproducible and thus, sampling result is deemed acceptable. Further, the verification team reviewed all the primary monitoring records during remote audit assessment to assess the consistency of information with ER calculation spreadsheet and found the monitoring data to be correctly transcribed into the ER sheet and MR. Based on that, verification team concludes that sampling results and values presented by CME in the MR and ER calculation spread sheet and results of survey are consistent with the onsite observation and interview with the end users.

The number of installed units, eligible for crediting during the current monitoring period are 183,882 (59,438 stoves for 3-4 years and 124,444 stoves for 4-5 years) for MS1 and 183,882 (59,438 stoves for 4-5 years and 124,444 stoves for 5-6 years) for MS2.

The details of the sampled domestic users (usage survey) assessed to confirm the project implementation and other monitoring aspects are presented in table 7-4 of this report.

5.12. ER Calculation

The methodology provides equation for emission reductions calculation (without separate baseline, projector leakage emission reduction equations). As per the methodology, and the PoA-DD, emission reductions are calculated as:

$$ER_y = \sum_{0\text{to}1}^{x\text{to}y} N_{P,y} * P_y * U_{P,y} * (f_{NRB,y} * EF_{b,fuel,CO2} + EF_{b,fuel,non\_CO2}) * (1 - DF_{b,Stove,y})$$

Where,

$N_{P,y}$	Number of project cook stoves of each age group operational in the year y
P_y	Quantity of firewood that is saved in the year y (tons per household in year y)
$U_{P,y}$	Usage rate for project cook stoves in year y, based on adoption rate and drop off rate revealed by usage surveys (fraction)
$f_{NRB,b,y}$	Fraction of biomass, used in year y for baseline scenario, which can be established as non-renewable. The project proponents shall estimate project specific national/ regional value or apply the default f_{NRB} value provided by the CDM Executive Board and endorsed by the host country DNA.
$EF_{b,fuel,CO2}$	CO_2 emission factor of firewood that is substituted or reduced. (Default value for wood fuel 1.747 tCO_2/ton of wood
$EF_{b,fuel,non\_CO2}$	Non-CO_2 emission factor of firewood that is substituted or reduced. (Default value for wood fuel 0.533 tCO_2/ton of wood)
$DF_{b,Stove,y}$	Usage of baseline cook stove during the year y (fraction) in project scenario
x	y – 1
y	Year of the crediting period

Determination of quantity of biomass saved (P_y):
Quantity of firewood that is saved (P_y)is estimated as follows:

$$P_y = B_{b,y} * (1-\eta_b/\eta_{p,y}) \times LAF$$

$B_{b,y}$	Quantity of firewood consumed in baseline scenario during year y (tones per household per year)
$\eta_{p,y}$	Efficiency of project cook stove in year y (fraction)
η_b	Efficiency of the baseline cook stove being replaced (fraction). A default value of 10% shall be used if the replaced cook stove is a three stone fire, or a conventional device without a grate or a chimney i.e. with no improved combustion air supply or flue gas ventilation
LAF	Default leakage adjustment factor = 0.95 to account for leakages related to non-renewable biomass saved by the project activity

Determination of quantity of firewood consume in the baseline ($B_{b,y}$):
The firewood consumed is the estimated average annual consumption of firewood per household (tons/year), which may be derived using option (a) of the methodology, i.e. historical data. Accordingly, $B_{b,y}$ is referenced from historical data as available in published literature. As per table 2.2 of the World Bank Study, Restoring Balance: Bangladesh's Rural Energy Realities, March 2009, the fuel wood usage per household for cooking is 1.06484 tons per annum.

Determination of project cook stove efficiency ($\eta_{p,y}$):
Efficiency of project cook stove in year y ($\eta_{p,y}$) is estimated as follows:

$$\eta_{p,y} = \eta_p * (DF_\eta)^{y-1} * 0.94.$$

Where,

$\eta_{p,y}$	Efficiency of project cook stove in year y (fraction)
η_p	Efficiency of project cook stove (fraction) determined at the start of the project activity.
DF_η	Discount factor to account for efficiency loss of project cook stove per year of operation (Fraction). The default value for this parameter is 0.99 i.e. 1% efficiency loss/year.
0.94	Adjustment factor to account for uncertainty related to project cook stove efficiency test

VERs achieved by the vintage year (here vintahes are defined based on MS1 and MS2)

Specific-case VPA reference number	GHG emission reductions or net GHG removals by sinks (tCO_2e) achieved in the monitoring period				
	Up to 31/12/2012	From 01/01/2013			Total amount
		2018	2019	2020	
VPA 01	0	7,271	8,448	1,382	**17,101**
VPA 02	0	6,944	8,068	1,320	**16,332**
VPA 04	0	7,315	8,499	1,390	**17,204**
VPA 05	0	7,116	8,268	1,353	**16,737**
VPA 06	0	6,970	8,099	1,325	**16,394**
VPA 07	0	2,758	3,204	524	**6,486**
VPA 08	0	3,506	4,073	667	**8,246**

VPA 09	0	2,370	2,753	451	**5,574**
VPA 10	0	2,757	3,204	524	**6,485**
VPA 11	0	1,892	2,198	360	**4,450**
VPA 12	0	3,629	4,216	690	**8,535**
VPA 13	0	3,014	3,503	573	**7,090**
VPA 14	0	5,046	5,862	959	**11,867**
VPA 15	0	3,126	3,632	594	**7,352**
VPA 16	0	2,481	2,883	472	**5,836**
VPA 17	0	3,789	4,402	720	**8,911**
VPA 18	0	2,289	2,660	435	**5,384**
VPA 19	0	3,486	4,051	663	**8,200**
VPA 20	0	3,060	3,556	582	**7,198**
VPA 21	0	6,138	7,131	1,167	**14,436**
VPA 22	0	4,294	4,988	816	**10,098**
VPA 23	0	4,670	5,425	888	**10,983**
VPA 24	0	3,859	4,484	734	**9,077**
VPA 25	0	497	579	95	**1,171**
VPA 26	0	4,869	5,662	927	**11,458**
VPA 27	0	1,350	1,572	258	**3,180**
VPA 28	0	3,263	3,798	622	**7,683**
VPA 29	0	7,270	8,460	1,385	**17,115**
VPA 30	0	4,288	4,990	817	**10,095**
VPA 31	0	5,306	6,176	1,011	**12,493**
VPA 32	0	7,437	8,656	1,417	**17,510**
VPA 33	0	1,667	1,941	318	**3,926**
VPA 34	0	235	275	45	**555**
VPA 35	0	7,564	8,803	1,441	**17,808**
VPA 36	0	7,587	8,829	1,445	**17,861**
	0	**149,113**	**173,348**	**28,370**	**350,831**

5.13. Quality Management

Quality Management procedures for measurements, collection and compilation of data, data storage and archiving, calibration, maintenance and training of personnel in the framework of this GS PoA-DD have been defined. The procedures defined can be assessed as appropriate for the purpose. No significant deviations thereof have been observed during the verification.

5.14 Actual emission reductions during the first commitment period and the period from 1 January 2013 onwards

The MR(s) include(s) actual ER values achieved from 1 January 2013 onwards as follows:

Table 5-2: Emission reductions before and after the end of 2012

	until 2012-12-31	from 2018-03-01 to 2021-02-28	Sum
Emission reductions [tCO_2e]	**-**	**350,831**	**350,831**

1) Both days included

5.15. Comparison with ex-ante estimated emission reductions

The MR includes a comparison of the calculated actual emission reductions with the ex-ante calculated values in the registered VPA-DD.

CPA	Amount estimated ex ante for this monitoring period (tCO_2e)	Actual values achieved during this monitoring period (tCO_2e)
GS 3544	18,373	17,101
GS 3482	18,373	16,332
GS 3619	18,373	17,204
GS 3620	18,373	16,737
GS 3618	18,373	16,394
GS 4372	17,725	6,486
GS 4373	17,750	8,246
GS 4374	17,764	5,574
GS 4375	17,797	6,485
GS 4376	17,810	4,450
GS 4377	17,829	8,535
GS 4378	17,848	7,090
GS 4379	17,869	11,867
GS 4380	17,881	7,352
GS 4381	17,894	5,836
GS 4382	17,915	8,911
GS 4384	17,921	5,384
GS 4383	17,933	8,200
GS 4385	17,940	7,198
GS 4386	17,959	14,436
GS 4387	17,971	10,098
GS 4388	17,987	10,983
GS 4389	18,015	9,077
GS 4390	18,019	1,171
GS 4391	18,037	11,458
GS 4392	18,052	3,180
GS 4393	18,054	7,683
GS 4394	18,086	17,115
GS 4395	18,106	10,095

GS 4396	18,118	12,493
GS 4397	18,139	17,510
GS 4398	18,164	3,926
GS 4399	18,165	555
GS 4400	18,187	17,808
GS 4401	18,209	17,861
Total	**631,007**	**350,831**

Ex-Ante Ers: **631,007** tCO_2e

Ex-Post ERs: **350,831** tCO_2e

Difference: **280,176** tCO_2e

During the interviews, the VVB noted that floods in 2016 were the main reason for lower value of emission reduction as the total number of ICS being credited in the applied monitoring period. The VPAs under concern were registered with ~325k ICSs installed. The VVB could assess the remaining active ICS through the data base. Additionally, all the sampled ICS were found to be with same status which was consistent with the monitoring surveys. In addition, the number of active ICS are same as the last monitoring period (MP3). The VVB also confirmed that no new ICS were added during current monitoring period hence the number of ICS remains unchanged. The ex-post value is found to be lower than the ex-ante determined value.

5.16. Contribution to Sustainable Development

The SD indicators as outlined in the sustainability monitoring plan of the GS PoA / VPA Documents are monitored and reported appropriately and cross-verified by means of desk review of survey reports, interviews with the CME operation personnel and selected households. The monitoring system and all applied procedures are in compliance to the sustainability monitoring plan in the registered GS VPA-DD and the Gold Standard principles.

Table 5-1: Assessment of monitored SD Indicators

<table>
<tr><th>Indicator</th><th>Chosen Parameter</th><th>Situation as at 29/02/2020</th><th>Verification Opinion</th></tr>
<tr><td>SDG 1: No Poverty</td><td>$BSA_{Project}$ (Access to Basic Services (Number of ICS distributed under the project))</td><td>
<table>
<tr><th>VPA number</th><th>No. of ICS installed</th></tr>
<tr><td>VPA 01</td><td>9,029</td></tr>
<tr><td>VPA 02</td><td>8,623</td></tr>
<tr><td>VPA 03</td><td>0</td></tr>
<tr><td>VPA 04</td><td>9,083</td></tr>
<tr><td>VPA 05</td><td>8,837</td></tr>
<tr><td>VPA 06</td><td>8,656</td></tr>
<tr><td>VPA 07</td><td>3,425</td></tr>
<tr><td>VPA 08</td><td>4,354</td></tr>
<tr><td>VPA 09</td><td>2,943</td></tr>
<tr><td>VPA 10</td><td>3,424</td></tr>
<tr><td>VPA 11</td><td>2,350</td></tr>
<tr><td>VPA 12</td><td>4,507</td></tr>
</table>
</td><td>The parameter “Number of ICS distributed under the project” indicates the access to the basic services, in this case clean and efficient cooking device (ICS). The program is develop with the objective to make efficient, economic (fuel economy), healthy devices to all the strata of community including the poor people.

The parameter is therefore represented based on number of ICS disseminated. The VVB has</td></tr>
</table>

Indicator	Chosen Parameter	Situation as at 29/02/2020	Verification Opinion
		VPA 13 3,744 VPA 14 6,266 VPA 15 3,882 VPA 16 3,082 VPA 17 4,705 VPA 18 2,843 VPA 19 4,330 VPA 20 3,801 VPA 21 7,622 VPA 22 5,332 VPA 23 5,799 VPA 24 4,793 VPA 25 619 VPA 26 5,968 VPA 27 1,642 VPA 28 3,966 VPA 29 8,834 VPA 30 5,211 VPA 31 6,449 VPA 32 9,038 VPA 33 2,027 VPA 34 287 VPA 35 9,192 VPA 36 9,219 **Total 183,882**	verified the dissemination record of ICS during the verification. The VVB confirms that the applied values are accurate and best represent the monitored parameter under the perspective of meeting the SDG goal for the PoA.
SDG 1: No Poverty	$HHS_{Project}$ (% Users reporting money saving due to reduced fuel consumption in baseline)	**MS#1** 94.76% **MS#2** 93.66%	The program is developed with the objective to make efficient, economic (fuel economy), healthy devices to all the strata of community including the poor people. The end users were also surveyed to confirm if the ICS saved fuel. Based on survey results, it was confirmed that ICS reduced the fuel consumption as well time for cooking and hence led to savings which was utilize for other expenses.
SDG 3: Good Health and Well Being	$SPM_{HHProject}$ - (% Users reporting reduction in smoke/PM emissions while cooking on improved stove in Project)	**MS#1** 94.76% **MS#2** 93.66%	During the survey, the PP has enquired about reduction in smoke/PM emissions while cooking on improved stove. All of the end users have confirmed that there was certain decrease in the indoor emissions. The data was based on the Project survey results conducted. The data is derived from the monitoring survey. The monitoring survey results confirmed reduction in the

Indicator	Chosen Parameter	Situation as at 29/02/2020	Verification Opinion
			smoke levels which in turn confirms good health and wellbeing. The VVB confirms that the applied values are accurate and best represent the monitored parameter under the perspective of meeting the SDG goal for the PoA.
SDG 5: Gender Equality	$HHT_{Project}$ – (% Users reporting time saving due to reduced collected fuel consumption / cooking time in project)	**MS#1** 94.76% **MS#2** 93.66%	During the survey, the PP has enquired about reduction in time saving due to reduced collected fuel consumption / cooking time in project while cooking on improved stove. The majority of the end users have confirmed that there was certain decrease in the fuel consumption, and hence corresponding decrease in the time required to collect the fuel. The data was based on the Project survey results conducted. The data is derived from the monitoring survey. The monitoring survey results confirmed reduction in the fuel requirement to cook food which in turn saves the time for women for the fuel collection. The reported parameter is deemed accurate.
SDG 7: Affordable and Clean Energy	$ACS_{Project}$ - (Access to affordable and clean energy (% of operating ICS units under Project))	**MS#1** 94.64% **MS#2** 93.50%	Refer assessment under parameter ($BSA_{Project}$).
SDG 8: Decent Work and Economic Growth	QE $IG_{Project}$ - Quantitative Employment and income generation (Number of person (male and female) hired under Project)	**MS#1** 551 **MS#2** 580	The employment database provided by BBF was reviewed to cross check the number of direct jobs created by the project activity. Based on the review of "Declaration of Employment MP4-MS1.pdf" and "Declaration of Employment MP4-MS2.pdf" (51 female employee and 500 male employees were employed, out of which 543 are skilled and 8 are unskilled for MS1) and (60 female employee and 520 male employees were employed , out of which 572 are skilled and 8 are unskilled for MS2).

Indicator	Chosen Parameter	Situation as at 29/02/2020	Verification Opinion
			The VVB confirm that the wages were at par with the industrial standard and meeting the requirements of minimum wages (applicable to the host country Bangladesh) /SD1/. The reported parameter is deemed accurate.
SDG 12: Responsible consumption and production	$FC_{Project}$ - Average fuel consumption per HH in Project	**MS#1** 0.5054 **MS#2** 0.5105	The parameter is monitored based on the monitoring surveys. The end users confirmed that there was reduction in the fuel wood consumption. The VVB has verified the submitted survey records and confirms the reported value as accurate.
SDG 13:	Amount of CO_2e emissions reduced by the project	**MS#1** 177,884 **MS#2** 172,947 **Total** **350,831**	The ERs are calculated appropriately based on the ex-ante fixed and the monitored parameters. Please refer to the detailed assessment of the ER calculation, monitored parameters and ex-ante parameters.

The verification team confirmed that no changes to the registered SD parameters have occurred that may have an impact on Gold Standard qualification of this project activity.

5.17. Overall Aspects of the Verification

All necessary and requested documentation was provided by the project participants so that a complete verification of all relevant issues could be carried out.

Access was granted to all installed domestic ICS which are relevant for the project performance and the monitoring activities.

The verification team has checked on the agreement between the manufacturer and users (domestic) which is basically the part of the purchase receipt where users of ICS surrender the carbon credits generated due to their use.

Users agreed to give up the right to the use the carbon emission reductions to Bangladesh Bondhu Foundation.

No issues have been identified indicating that the implementation of the project activity and the steps to claim emission reductions are compliant with the GS requirements.

5.18. Grievances

The verification team has interviewed the operational personnel, reviewed the survey report and there are no complaints and grievances raised by the householders.

The verification team has interviewed the domestic ICS users during the remote onsite inspection and observed that there were no complaints as regards to the CME personnel and the other involved parties.

5.19 Hints for next periodic Verification

Not applicable. No new FAR were raised during the current verification.

6. VERIFICATION AND CERTIFICATION STATEMENT

Bangladesh Bondhu Foundation has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 4th periodic verification of first crediting period of the PoA titled:

"GHG Emission Reduction Through Use of Bondhu Chula (Improved Cook Stoves) in Bangladesh" GS PoA ID-3112,

with regard to the relevant GS requirements for project activities.. The PoA reduces GHG emissions by reducing the use of non-renewable biomass or fossil fuel for cooking. Technologies disseminated under the PoA are more efficient than baseline. This verification covers the emission reductions achieved by VPAs in its corresponding monitoring periods:

VPA No.	Monitoring period (MP): ER's claimed from 01/03/2018 to 29/02/2020 as applicable[8]	
	MS1	MS2
1 to 2 and 4 to 36	01/03/2018 –28/02/2019	01/03/2019 – 29/02/2020

In the course of the verification 05 Corrective Action Requests (CAR), 01 Clarification Requests (CL) were raised/assessed and successfully closed. Besides, no Forward Action Request (FAR) has been raised to be considered during next subsequent verification. The verification is based on the draft monitoring report(s), revised monitoring report(s), the monitoring plan as set out in the registered VPA-DD(s), the validation report, emission reduction calculation spreadsheet and supporting documents made available to the TÜV NORD JI/CDM CP by the project participant. As a result of this verification, the verifier confirms that:

- all operations of the project are implemented and installed as planned and described in the validated project design document.
- the monitoring plan is in accordance with the applied approved GS methodology.
- the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately.
- the monitoring system is in place and functional. The project has generated GHG emission reductions.
- the project contributes to sustainability development

As the result of the 4th periodic verification of CP1, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. TÜV NORD JI/CDM CP herewith confirms that the PoA has achieved emission reductions in the above-mentioned reporting period as follows:

VERs achieved by the vintage year (here vintahes are defined based on MS1 and MS2)

Specific-case VPA reference number	GHG emission reductions or net GHG removals by sinks
	(tCO_2e) achieved in the monitoring period

[8] For VPA wise breakup, please refer section 5.15 of this FVR

	Up to 31/12/2012	From 01/01/2013			Total amount
		2018	2019	2020	
VPA 01	0	7,271	8,448	1,382	**17,101**
VPA 02	0	6,944	8,068	1,320	**16,332**
VPA 04	0	7,315	8,499	1,390	**17,204**
VPA 05	0	7,116	8,268	1,353	**16,737**
VPA 06	0	6,970	8,099	1,325	**16,394**
VPA 07	0	2,758	3,204	524	**6,486**
VPA 08	0	3,506	4,073	667	**8,246**
VPA 09	0	2,370	2,753	451	**5,574**
VPA 10	0	2,757	3,204	524	**6,485**
VPA 11	0	1,892	2,198	360	**4,450**
VPA 12	0	3,629	4,216	690	**8,535**
VPA 13	0	3,014	3,503	573	**7,090**
VPA 14	0	5,046	5,862	959	**11,867**
VPA 15	0	3,126	3,632	594	**7,352**
VPA 16	0	2,481	2,883	472	**5,836**
VPA 17	0	3,789	4,402	720	**8,911**
VPA 18	0	2,289	2,660	435	**5,384**
VPA 19	0	3,486	4,051	663	**8,200**
VPA 20	0	3,060	3,556	582	**7,198**
VPA 21	0	6,138	7,131	1,167	**14,436**
VPA 22	0	4,294	4,988	816	**10,098**
VPA 23	0	4,670	5,425	888	**10,983**
VPA 24	0	3,859	4,484	734	**9,077**
VPA 25	0	497	579	95	**1,171**
VPA 26	0	4,869	5,662	927	**11,458**
VPA 27	0	1,350	1,572	258	**3,180**
VPA 28	0	3,263	3,798	622	**7,683**
VPA 29	0	7,270	8,460	1,385	**17,115**
VPA 30	0	4,288	4,990	817	**10,095**
VPA 31	0	5,306	6,176	1,011	**12,493**
VPA 32	0	7,437	8,656	1,417	**17,510**
VPA 33	0	1,667	1,941	318	**3,926**
VPA 34	0	235	275	45	**555**
VPA 35	0	7,564	8,803	1,441	**17,808**
VPA 36	0	7,587	8,829	1,445	**17,861**
	0	**149,113**	**173,348**	**28,370**	**350,831**

Emission reductions: **350,831 tCO_2e**

New Delhi, 15/06/2023

Prakash Kumar Mishra
TÜV NORD JI/CDM Certification Program
Verification Team Leader

Essen, 15/06/2023

Kunal Rami
TÜV NORD JI/CDM Certification Program
Final Approval

7. REFERENCES

Table 7-1: Documents provided by the project participant(s)

Reference	Document
Monitoring Report	
/MR/	1. Monitoring Report dated 2022-01-10 v 1.0 2. Monitoring Report dated 2022-07-21 v 2.0 3. Monitoring Report dated 2023-05-15 v 4.0
ER Spreadsheet	
/ER1/	1. Emission reduction worksheet for Monitoring Report dated 2022-02-22 v 1.0 2. Emission reduction worksheet for Monitoring Report dated 2022-07-21 v 2.0
Database	
/DB1/	ICS installation database GS 3112 MP#4 Installation Database v1.0 29042022.xlsx
/DB2/	• Sample Bondhu Chula Customer Agreement Form for MS#1, MS#2 • Random Number Evidence ○ MS1 (3-4 yrs) Random number evidence.pdf ○ MS1 (4-5 yrs) Random number evidence.pdf ○ MS2 (4-5 yrs) Random number evidence.pdf ○ MS2 (5-6 yrs) Random number evidence.pdf
/DB3/ /RC/	• Sample Monitoring Survey Forms in form of questionnaire • Reliability Check • Sample size and Reliability check for WBT integrated into the ER worksheet
/TRG/	• BBF Local Partner Training Manual: ○ Partner responsibilities.pdf ○ Partner Training Manual.pdf • Monitoring Survey Team Attendance sheet • MS1 - ○ Surveyor Training -22.12.18.pdf ○ Surveyor Training -23.12.18.pdf • MS2 - ○ Surveyor Training -17.12.2019.pdf • MS3 - ○ Surveyor Training - 20.12.2020.pdf

Reference	Document
Survey and monitoring records	
/S1/	Monitoring Survey Form • Monitoring Survey Records for MS#1 • Sample Bondhu Chulhas Photos
/S2/	Monitoring Survey Form • Monitoring Survey Records for MS#2 • Sample Bondhu Chulhas Photos
Sustainability Development Indicator	
/SD1/	• HR Records o Declaration of Employment MP4-MS1.pdf o Declaration of Employment MP4-MS2.pdf
/S1/, /S2/	Refer description above
Training	
/TECH/	• Test report– of ICS - Bondhu Chula (ICS) Test Report.jpg.pdf • Specification– of ICS –– - Bondhu Chula Specifications.pdf • Lifespan certificate– of ICS –– - Lifespan Certificate by SZCSL (stove designer).pdf

Table 7-2: Background investigation and assessment documents

Reference	Document
/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
/GS4GG TA/	GS4GG Requirements
/GSM/	The Gold Standard Simplified Methodology for Efficient Cookstoves, version 1
/GSS/ **/SSP/**	Guidelines for Sampling and Surveys for CDM Project Activities and Programme Of Activities, EB 67, Annex 22
/IPCC/	Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories: 1. Non-CO_2 Stationery Combustion 2. Emissions from Livestock and Manure Management (Chapter 10)

Reference	Document
	3. IPCC Second Assessment Report – Climate Change 1995: A Report of the Intergovernmental Panel on Climate Change
/KP/	Kyoto Protocol (1997)
/MA/	Decision 3/CMP. 1 (Marrakesh – Accords)
/GSPoA-DD/	PoA GS 3112 Version 4.0 - GS 3112 PoA-DD Bondhu Chulha Program v4.0 20012015.pdf
/PS/	CDM Project Standard (Version 3.0)
/SSS/	Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities, version 09
/TRAN/	Transition Annex for PoA "GHG Emission Reduction through use of Bondhu Chula (Improved CookStoves) in Bangladesh" for the VPA 1-46 Transition Review under Gold Standard for the Global Goals for PoA and VPA 1-46
/VER/	Documents of previous verification (Monitoring report, verification report, ER calculation sheet available on the project page) https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/SE7XIMKF8NYVOTL16BW3U45C9ZDGAP/view?cp=1
/VPA/	1. GS 3544 VPA01 VPA-DD ver 07.0 17032015 clean.pdf 2. GS 3482 VPA02 VPA-DD ver 04.0 15042015 clean.pdf 3. GS 3619 VPA04 VPA-DD ver 03.0 15042015 clean.pdf 4. GS 3620 VPA05 VPA-DD ver 03.0 15042015 clean.pdf 5. GS 3618 VPA06 VPA-DD ver 03.0 15042015 clean.pdf 6. GS 4372 VPA 7 VPA-DD ver 03.0 03062016.pdf 7. GS 4373 VPA 8 VPA-DD ver 03.0 03062016.pdf 8. GS 4374 VPA 9 VPA-DD ver 03.0 03062016.pdf 9. GS 4375 VPA 10 VPA-DD ver 03.0 21092016.pdf 10. GS 4376 VPA 11 VPA-DD ver 03.0 21092016.pdf 11. GS 4377 VPA 12 VPA-DD ver 03.0 21092016.pdf 12. GS 4378 VPA 13 VPA-DD ver 03.0 21092016.pdf 13. GS 4379 VPA 14 VPA-DD ver 03.0 21092016.pdf 14. GS 4380 VPA 15 VPA-DD ver 03.0 21092016.pdf 15. GS 4381 VPA 16 VPA-DD ver 03.0 21092016.pdf 16. GS 4382 VPA 17 VPA-DD ver 03.0 21092016.pdf 17. GS 4384 VPA 18 VPA-DD ver 03.0 21092016.pdf 18. GS 4383 VPA 19 VPA-DD ver 03.0 21092016.pdf 19. GS 4385 VPA 20 VPA-DD ver 03.0 21092016.pdf 20. GS 4386 VPA 21 VPA-DD ver 02.0 13012016.pdf 21. GS 4387 VPA 22 VPA-DD ver 02.0 13012016.pdf 22. GS 4388 VPA 23 VPA-DD ver 02.0 13012016.pdf 23. GS 4389 VPA 24 VPA-DD ver 02.0 13012016.pdf

Reference	Document
	24. GS 4390 VPA 25 VPA-DD ver 02.0 13012016.pdf 25. GS 4391 VPA 26 VPA-DD ver 02.0 13012016.pdf 26. GS 4392 VPA 27 VPA-DD ver 02.0 13012016.pdf 27. GS 4393 VPA 28 VPA-DD ver 02.0 13012016.pdf 28. GS 4394 VPA 29 VPA-DD ver 02.0 13012016.pdf 29. GS 4395 VPA 30 VPA-DD ver 02.0 13012016.pdf 30. GS 4396 VPA 31 VPA-DD ver 02.0 13012016.pdf 31. GS 4397 VPA 32 VPA-DD ver 02.0 13012016.pdf 32. GS 4398 VPA 33 VPA-DD ver 02.0 13012016.pdf 33. GS 4399 VPA 34 VPA-DD ver 02.0 13012016.pdf 34. GS 4400 VPA 35 VPA-DD ver 02.0 13012016.pdf 35. GS 4401 VPA 36 VPA-DD ver 02.0 13012016.pdf
/VVS/	CDM Validation and Verification Standard (Version 03.0)

Table 7-3: Websites used

Reference	Link	Organisation
/gs/	http://www.goldstandard.org/	CDM Gold Standard
/unfccc/	http://cdm.unfccc.int	UNFCCC
/ipcc/	www.ipcc-nggip.iges.or.jp	IPCC publications
/ss/	http://www.raosoft.com/samplesize.html	Sampling Size

Table 7-4: List of interviewed persons

/IM02/	T	Rohit Lohia	Director, Climate Secure
	T	Ashutosh Tiwari	Consultant, Climate Secure
	T	Mohit Gupta	Consultant, Climate Secure
/IM03/	T	Abedul Islam	End User MS-1
/IM03/	T	Horipodo Mondal	End User MS-1
/IM03/	T	Komodini Rani	End User MS-1
/IM03/	T	Md. Mustakin (Repondent - Shimul)	End User MS-1
/IM03/	T	Sahjahan	End User MS-1

/IM03/	T	Yusuf	End User MS-1
/IM03/	T	Mst. Baby Aktar	End User MS-1
/IM03/	T	Ajinou Begum	End User MS-1
/IM03/	T	Fatima Begum	End User MS-2
/IM03/	T	Md. Rozob Ali	End User MS-2
/IM03/	T	Najmin	End User MS-2
/IM03/	T	Taslima	End User MS-2
/IM03/	T	Kulsum Begum	End User MS-2
/IM03/	T	Md. Burhan Sheikh	End User MS-2
/IM03/	T	Mittidas	End User MS-2
/IM03/	T	Md. Momin	End User MS-2

List of households visited: /LHH/

List of households interviewed by telephone calls:/LHH/

1) Means of Interview: (**T**elephone, **E**-Mail, **V**isit)

ANNEX

A1: Verification Protocol

A2: Statements of Competence of involved Personnel

ANNEX 1: VERIFICATION PROTOCOL

Table A-1: GHG calculation procedures and management control testing / detailed audit testing of residual risk areas and random testing

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including *Forward Action Requests*)
Raw data generation				
• Installation of measuring equipment • Dysfunction of installed equipment • Maloperation by operational personnel • Downtimes of equipment • Exchange of equipment • Change of measurement equipment characteristic • Insufficient accuracy • Change of technology	• Installation of modern and state of the art equipment • Process control automation • Internal data review • Regular visual inspect-ions of installed equip-ment • Only skilled and trained personnel operates the relevant equipment • Daily raw data checks • Immediate exchange of dysfunctional equipment • Stand-by duty is organized	• Inadequate installation / operation of the monitoring equipment • Inadequate exchange of equipment • Change of personnel • Undetected measurement errors • Inappropriateness of Management system procedures w.r.t. monitoring plan requirements (e.g. substitute value strategies) • Non-application of management system procedures • Insufficient accuracy	• Site – visit • Check of equipment • Check of technical data sheets • Check of suppliers information / guarantees • Check of calibration records, if applicable • Check of maintenance records • Counter-check of raw data and commercial data • Check of CDM management system • Check of CDM related procedures	• **See Table A-2**

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including *Forward Action Requests*)
• Accuracy of values supplied by Third Parties	• Training • Internal audit procedures • Internal check of QA/QC measures of involved Third Parties	• Inappropriate QA/QC measures of Third Parties	• Application of CDM management system procedures • Check of trainings • Check of responsibilities • Check of QA/QC documentation / evidences of involved Third Parties	
Raw data collection and data aggregation				
• Wrong data transfer from raw data to daily and monthly aggregated reporting forms • IT Systems • Spread sheet programming • Manual data transmission • Data protection • Responsibilities	• Cross-check of data • Plausibility checks of various parameters. • Appropriate archiving system • Clear allocation of responsibilities • Application of CDM Management system procedures	• Unintended usage of old data that has been revised • Incomplete documentation • Ex-post corrections of records • Ambiguous sources of information • Non-application of management system procedures • Manual data transfer mistakes	• Check of data aggregation steps • Counter-calculation • Data integrity checks by means of graphical data analysis and calculation of specific performance figures • Check of management system certification • Check of data archiving system	• **See Table A-2**

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including *Forward Action Requests*)
	• Usage of standard software solutions (Spreadsheets) • Limited access to IT systems • Data protection procedures	• Unintended change of spread sheet programming or data base entries • Problems caused by updating/upgrading or change of applied software	• Check of application of Management system procedures	
Other calculation parameters				
• Emission factors, oxidation factors, coefficients	• The values and data sources applied are defined in the VPA-DD and monitoring plan	• Unintended or intended Modification of calculation parameters • Wrong application of values • Misinterpretations of the applied methodology and/ or the VPA-DD • Missing update of applicable regulatory framework (e.g. IPCC values)	• Update-check of regulatory framework • Countercheck of the applied MP in the MR against the methodology and the VPA-DD	• **See Table A-2**
Calculation Methods				

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including *Forward Action Requests*)
• Applied formulae • Miscalculation • Mistakes in spread-sheet calculation	• Advanced calculation and reporting tools • A CDM coordinator is in charge of the CDM related calculations • Usage of tested / counterchecked Excel spreadsheets • Involvement of external consultants	• The danger of miscal-culation can only be minimized.	• Countercheck on the basis of own calculation. • Spread sheet walk-trough. • Plausibility checks • Check of plots	• **See Table A-2**
Monitoring reporting				
• Data transfer to the author of the monitoring report • Data transfer to the monitoring report • Unintended use of outdated versions	• An experienced CDM consultant is responsible for monitoring reporting. • CDM QMS procedures are defined	• The danger of data transfer mistakes can only be minimized • Inappropriate application of QMS procedures	• Counter check with evidences provided. • Audit of procedure application	• **See Table A-2**

Table A-2: (Project specific) Periodic Verification Checklist

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
A. Description of the PoA and its component project activity (-ies)				
A.1. Purpose and general description of the PoA and VPA(s) *Check if section of the MR includes the following:* - *Purpose of the PoA and each VPA and the measures taken to reduce GHG emissions* - *Brief description of the installed technology and equipment* - *Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods etc.)* - *Total emission reductions achieved in this monitoring period*	/MR/ /GSPoA-DD/ /VPA/	The verification team has checked section A.1 of the MR and confirms that the information provided is complete and correct with regards to the following: ☒ Purpose of the PoA and its VPA(s) and the measures taken to reduce GHG emissions ☒ Brief description of the installed technology and equipment's ☒ Relevant dates for the VPAs (e.g., construction, commissioning, continued operation periods, VPA inclusion, etc.) ☒ Emission reductions achieved in this monitoring period by each VPA and total emission reductions achieved by the PoA In this context the below finding has been identified: NA	OK	OK
A.2. Location of project activity *Check if section of the MR reflects correctly the following:* - *Host Party(ies)* - *Region / State / Province etc.* - *City / Town / Community etc.* - *Physical / geographical location (e.g., Latitude and Longitude)*	/MR/ /VPA/ /IM01/ /IM03/	The verification team has checked section A.2 of the MR and confirms by means of comparison with the information given in the VPA-DD and information gathered during the remote site visit that the information provided is complete and correct with regards to the following: ☒ Host Party(ies) ☒ Region / State / Province ☒ City / Town / Community	~~CAR 3~~	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
		☒ Physical / Geographical location Refer closure to CAR 3		
A.3. Parties and Project Participants ***(EB 75, Annex 7, A.3)*** *Check if section of the MR includes the following:* - *All PPs as displayed on the UNFCCC website* - *A correctly filled table as per the MR template*	/MR/ /GS/	The verification team has checked Appendix of the MR as well as the GS website and confirms that: ☒ all PPs as displayed on the project related GS website are correctly listed ☒ the table as per the template MR has been correctly filled	OK	OK
A.4. Reference of applied methodology *Check if section of the MR correctly describes / includes the following:* - *Reference to the applicable version of the methodology* - *Reference to the applicable version(s) of relevant methodological tools* - *Relevant GS/EB decisions, if applicable*	/MR/ /VPA/ /GS/	The verification team has checked section A.3 of the MR and confirms by means of comparison with the information given in the VPA-DD and displayed on the GS website that the information provided is complete and correct with regards to the following: ☒ Number, title and version of the applicable GS Methodology ☒ Name and version of applicable methodological tools ☒ Relevant GS decisions In this context no findings have been identified.	OK	OK
A.5. Crediting period of project activity *Check if section of the MR correctly includes the following:* - *Start date of the crediting period. In this context please check, if applicable, whether post registration changes to the start date have been accepted by the GS.*	/MR/ /GS/	The verification team has checked section A.4 of the MR(s) and confirms by means of comparison with the information provided in the corresponding VPA DD that the information provided is complete and correct with regards to the following: ☒ Start date of the crediting period. ☒ Length of the crediting period. Refer closure to CAR 2	~~CAR 2~~	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
- *Length and type of the crediting period*				
A.6. Publication of the Work Plan *Check if the work plan has been made submitted to GS before the verification commenced.*	/GS/	The verification team has ensured and confirms by means of checking the respective project information on the GS website that: ☒ The work and audit plan, was submitted to GS prior to the start of the verification activities. ☒ No comments have been received. In this context no findings have been identified.	OK	OK
B. Implementation of project activity				
B.1. Description of implemented registered programme of activities *Check if section of the MR correctly describes / includes the following:* - *Implementation status of the PoA and its VPAs* - *Detailed description of installed technology(ies) / technical processes and equipment applied* - *Diagrams (where appropriate)* - *Whether a single report or two MR are prepared; in case of two MR, check that all VPAs are considered in two separate batches*	/MR/ /GSPoA-DD/ /VPA) /IM01/	The verification team has checked section A.1 of the MR and confirms by means of comparison with the information given in the PoA-DD and VPA-DD, the project standard and information gathered during the remote site visit that: ☒ the description of the implementation status of the VPA is in line with the applicable provisions of the Gold standard ☒ an appropriate description of the installed technology(ies), technical process and equipment incl. diagrams, where applicable, has been included ☒ one single MR has been provided including all VPAs, OR ☐ two different MRs are prepared including all VPAs and information on the reference numbers of the VPAs that are included in each batch. In this context no findings have been identified.	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
B.1.1. Initial project implementation *Assess whether the VPA has been implemented and operated as per the registered VPA-DD and are all physical features of the project in place.* *Further focus on the potential phase wise implementation and check the reporting on the corresponding status and starting dates accordingly.* *Check if the project is still in compliance with the applicability conditions of the methodology.* *Also, discuss – if applicable – the necessity of PRC notifications / approvals.*	/MR/ /VPA/	The verification team has checked the implemented project activity and the MR and confirms by means of comparison with the information given in the VPA-DD, the applicable Gold Standard Requirements and information gathered during the remote site visit that: ☒ the project has been implemented and operated as per the registered VPA-DD and all physical features of the project are in place ☒ the project has been implemented phase wise and corresponding evidence has been provided ☒ the project is still in compliance with the applied methodology In this context no findings have been identified.	OK	OK
B.1.2. Technical equipment changes ***(VVS; § 225 a, 226)*** *Check if relevant technical equipment of the project activity has been exchanged or modified during the monitoring period. Further ensure that consistent notations of key equipment (meters etc.) in MR and calculation spreadsheet are applied* *Consider e.g. interviews with operational personnel, QMS records, maintenance records, instrument specifications.* *In case of changes, check whether the project is still in line with the registered VPA-DD and assure that these*	/MR/ /VPA/	The verification team has checked the implemented project activity and the MR and confirms by means of comparison with the information given in the VPA-DD, the applicable GS Requirements and information gathered during the remote site visit and interviews that: ☒ no technical equipment has been utilized during the monitoring period In this context no findings have been identified.	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
changes have been considered in the monitoring report and the emission reduction calculation. *In case of post registration changes pl. refer to chapter B.2.*				
B.1.3. Operation of the project activity ***(VVS; § 225 a, 226)*** *Check if relevant operation modes of the project activity have been exchanged or modified during the monitoring period.* *Consider e.g. interviews with operational personnel, operation log sheets, data management system records.* *In case of changes, check whether the project is still in line with the registered VPA-DD and assure that these changes have been considered in the monitoring report and the emission reduction calculation.* *In case of post registration changes pl. refer to chapter B.2.*	/MR/ /VPA/	The verification team has checked the implemented project activity and the MR and confirms by means of comparison with the information given in the VPA-DD, the applicable Gold Standard Requirements and information gathered during the remote site visit and interviews that: ☒ no relevant operation modes of the project activity have been exchanged or modified during the monitoring period ☐ the following changes have been adopted during the monitoring period; however, the project is still in line with the registered PDD:	OK	OK
B.1.4. Incidents ***(VVS; § 225 a, 226)*** *Identify if there have been any significant incidents, deviant operation modes and / or downtimes of the equipment?*	/MR/ /VER/	The verification team has checked the implemented project activity and the MR and confirms by means of comparison with the information given in the VPA-DD, the applicable Gold Standard Requirements and information gathered during the already executed remote site visit and interviews under CDM that:	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
Consider e.g. interviews with operational personnel, operational log sheets, analysis of performance data.		☒ no significant incidents, deviant operation modes and / or downtimes of the equipment happened during the monitoring period ☐ the following incidents, deviant operation modes and / or downtimes of the equipment happened during the monitoring period		
B.1.5. Legislation Find out – esp. in the context of methodological requirements - whether relevant legislation with effect on the project activity in the host country has been changed. Assess, in case of changes, whether consequences for the PA with regard to relevant CDM requirements have been accounted for. In case of changes data sources shall be referenced.	/MR/	The verification team has checked the host country legislation and confirms by means of comparison with the implemented project that: ☒ No relevant legislation with effect on the project activity in the host country has been changed In this context no findings have been identified.	OK	OK
B.1.6. Open issues from validation ***(VVS; § 213)*** *Check (esp. in case of 1st periodic verification) whether there are any open issues indicated in the validation report (e.g. FAR)?*	/VAL/	☒ There were no open issues addressed in the validation report ☒ All open issues from the validation have been appropriately addressed. ☐ The following issues related to the validation have not yet been appropriately addressed:	OK	OK
B.1.7. Open issues from previous verification ***(VVS; §§ 213; 284 h)*** *Check in case of further periodic verifications whether there are any open issues indicated in previous*	/MR/ /VER/	☒ There were no open issues addressed in the previous verification report ☐ All open issues from the previous verification have been appropriately addressed.	All FARs were CLOSED	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
verification reports (FAR) and take into consideration the guidance as specified in VVS.		☐ The following issues related to the previous verification have not yet been appropriately addressed: NA		
B.2. Post registration changes				
B.2.1. Post registration changes applicable to the proposed project activity *Indicate whether any post registration change already approved or under approval by the GS has been identified.*	/MR/ /VPA/	☒ No, by means of remote site visit, document check and interview it could be verified that the project is implemented and operated in line with the registered VPA-DD and the applied methodology. (Please proceed with section C) ☐ Yes, post registration changes have been identified and are assessed in detail in the subsequent steps. (Please proceed with B.2.2.)	OK	OK
B.2.2. Temporary deviations from the registered monitoring plan or applied methodology (TDfrMP; TDfMM) ***(EB 75, Annex 7, B.2.1; VVS §§ 251 - 256)*** *Indicate whether any temporary deviations have been applied during this monitoring period.* *In cases where approval has been sought from the EB please provide reference.* *If applied, provide a description of the deviation(s).* *This should include the reasons for the deviation(s), how it deviates from the monitoring plan and/or applied methodology(ies), the duration for which the deviation(s) is(are) applicable and justification on the*	/MR/ /VPA/	☒ No TDfrMP or TDfMM have been submitted to the GS prior to the current monitoring period ☐ The following TDfrMP or TDfMM have been approved or are under approval by the GS 1 Title: — Status: ☐ under approval; ☐ approved Appr.date: — Ref. No.: — 2 Title: —	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
conservativeness of the approach. Indicate if the deviation will lead to a reduction in the accuracy and if so, which conservative assumptions and discount factors have been applied. *For deviation(s) that require prior approval by the Board, include the date of approval and reference number.*		☐ Status: ☐ under approval; ☐ approved Appr.date: Ref.No. ☒ During the verification of the current MP no need for a TDfrMP or TDfMM has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA ☐ An approval of the following TDfrMP or TDfMM is to be requested from the GS for the current MP as appendix 1 of the project standard does not apply. 1 Issue: 2 Issue: ☐ The following TDfrMP or TDfMM for which appendix 1 of the PS is applicable have been applied: 1 Issue: 2 Issue: In this context no findings have been identified.		
B.2.3. Corrections ***(EB 75, Annex 7, B.2.2; VVS; §§ 257 - 259)*** *Indicate whether any corrections to project information or parameters fixed at validation have been approved during this monitoring period or submitted with this monitoring report.*	/MR/ /VPA/	☒ During the verification of the current MP no need for corrections has been identified. ☐ The following corrections have been applied:	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
In cases where the correction(s) and the revised VPA-DD are approved prior to the submission of this monitoring report for request for issuance, provide the approval date and reference number. Otherwise, provide the version number and the completion date of the revised VPA-DD. *Please check and report that the corrected information is an accurate reflection of the actual project information and that the corrected parameters are in accordance with the applied methodology and the monitoring plan.*		1 Issue: 2 Issue: In this context no findings have been identified.		
B.2.4. Permanent changes from the registered monitoring plan or applied methodology (PCfrMP; PCfMM) ***(EB 75, Annex 7, B.2.3; VVS; §§ 262 - 268)*** *Indicate whether any permanent changes from the registered monitoring plan or applied methodologies have been approved during this monitoring period or submitted with this monitoring report.* *Assure that modifications or additions of technologies/measures respect to the VPA-DD were already included in the originally registered PoA-DD.* *In cases where the change(s) and the revised VPA-DD are approved prior to the submission of this monitoring report for request for issuance, provide the approval date and reference number. Otherwise, provide the*	/MR/ /VPA/	☒ No PCfrMP or PCfMM.have been submitted to the GS prior to the current monitoring period ☐ The following PCfrMP or PCfMM have been approved or are under approval by the GS 1 Title Status ☐ under approval; ☐ approved Appr.date Ref. No. 2 Title Status ☐ under approval; ☐ approved Appr.date Ref.No.	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
version number and the completion date of the revised VPA-DD.		☒ During the verification of the current MP no need for a PCfrMP or PCfMM has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA ☐ An approval of the following PCfrMP or PCfMM is to be requested from the GS for the current MP as appendix 1 of the project standard does not apply. 1 Issue: 2 Issue: ☐ The following PCfrMP or PCfMM for which appendix 1 of the PS is applicable have been applied: 1 Issue: 2 Issue: In this context no findings have been identified.		
B.2.5. Changes to the project design of the registered PoA / VPA (CoPD) ***(EB 75, Annex 7, B.2.4; VVS; §§ 269 - 282)*** *Indicate whether any changes to the project design of the project activity have been approved during this monitoring period or submitted with this monitoring report.* *Assure that modifications or additions of technologies/measures respect to the VPA-DD were already included in the originally registered PoA-DD*	/MR/ /VPA/	☐ The following CoPD has been approved or are under approval by the GS 1 Title Status ☐ under approval; ☐ approved Appr.date Ref. No. 2 Title	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
In cases where the change(s) and the revised VPA-DD are approved prior to the submission of this monitoring report for request for issuance, provide the approval date and reference number. Otherwise, provide the version number and the completion date of the revised VPA-DD.		Status: ☐ under approval; ☐ approved Appr.date: Ref.No.: ☒ During the verification of the current MP no need for a CoPD has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA ☐ An approval of the following CoPD.is to be requested from the GS for the current MP as appendix 1 of the project standard does not apply. 1 Issue: 2 Issue: ☐ The following CoPD for which appendix 1 of the PS is applicable have been applied: 1 Issue: 2 Issue: In this context no findings have been identified.		
C. Description of monitoring system				
C.1. Monitoring Plan – VPA-DD Compliance ***(VVS, §§ 233-236)***	/MR/ /VPA/ /S1/	By means of comparison of the MR with the registered VPA-DD (or any revisions thereof) the verification team has checked whether the MP is in compliance with the registered VPA-DD. The outcome is as follows:	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
Check if the monitoring plan is in accordance with the monitoring plan contained in the registered VPA-DD (or any accepted revised MP). *Please check esp. If:* - *all parameters stated in the MP of the registered VPA-DD have been monitored and updated as applicable* - *the monitoring equipment has been controlled and calibrated as per the MP* - *the monitoring results are consistently recorded as per the approved frequency* - *QA/QC procedures have been applied in accordance with the MP*	/S2/	☒ The MP is completely in accordance with the last registered/approved version of the VPA-DD / MP. In this context no findings have been identified.		
C.2. Monitoring Plan – Meth Compliance ***(VVS, §§ 229-232)*** *Check if the monitoring plan is in accordance with the applied methodology.* *In case the methodology references applicable tools it has to be ensured that the MP is also compliant with those tools.* *Also please specify if monitoring aspects have been identified that are not specified in the methodology but may enhance the level of accuracy and completeness of the monitoring plan – this esp. applies for SSC VPAs.*	/MR/ /VPA/ /GSM/	By means of comparison of the MR with the applied GS methodology and related tools the verification team has checked whether the MP is in compliance with the MP related requirements of the applied methodology. The outcome is as follows: ☒ The MP is completely in accordance with the approved methodology applied by the GS project (last registered/approved version of the VPA-DD) ☒ The MP is completely in accordance with the applied tools which the methodology references. A breakdown of the referenced tools is as follows: 1 | Title (of the tool) | GS4GG Requirements	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<table><tr><td></td><td></td><td>MP compliance</td><td>☒ full compliance ☐ findings have been raised ☐ N/A (for MP)</td></tr><tr><td></td><td></td><td>Title (of the tool)</td><td>Tool for the demonstration and assessment of additionality</td></tr><tr><td></td><td>2</td><td>MP compliance</td><td>☐ full compliance ☐ findings have been raised ☒ N/A (for MP)</td></tr><tr><td></td><td></td><td>Title (of the tool)</td><td></td></tr><tr><td></td><td></td><td>Version</td><td></td></tr></table>In this context no findings have been identified.		
C.3. Management System ***(VVS, § 217 (a) (iii))*** *Check if the GHG data monitoring system can be assessed as appropriate.* *In case reference is made to a (certified) company quality management system, check if all GS related monitoring procedures have been fully integrated in the project participant's quality management system.*	/MR/ /DB1 /S1/ /IM01/	*Description:* The monitoring system is described in Section C of the MR including monitoring and survey methods applied. The staff collects necessary data at the time of sale / installation from the customer. This unique data helps to avoid double counting and enables tracking of the units for monitoring purposes. The section D of MR is transparently stating this data. *Verifier´s action:*	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
In case of a stand-alone system, check how the GHG management system has been implemented and effectiveness is ensured.		The project database, survey reports and forms have been assessed by the verification team. The verification team as interviewed enumerators, to confirm the quality control and monitoring procedures are implemented appropriately.		
C.4. Roles and Responsibilities ***(EB 75, Annex 7, Section C.; PS §196)*** *Check if all roles and positions of each person in the GHG data management process are clearly defined and implemented as stated in the monitoring plan. Please consider the complete data trail from raw data generation to submission of the final data.* *Identify, if relevant personnel w.r.t. monitoring has been exchanged?* *If so, have appropriate training measures been carried out.* *In case of changes, assure that the implemented monitoring procedures have not been affected.*	/MR/ /DB1/ /S1/	*Description:* Section C described the monitoring system which includes monitoring methods applied for: 1. Quality control measures 2. Carbon monitoring survey 3. Usage survey *Verifier´s action:* The project database, survey report and forms have been assessed by the verification team.	OK	OK
C.5. Emergency procedures for the monitoring system ***(EB 75, Annex 7, C; PS §196)*** *Check, as appropriate, whether relevant emergency procedures for the monitoring system have been*	/MR/ /IM01/ /IM03/	*Description:* The computer server in the office has the primary back-up data stored and an external back-up at external media which will be used in the event of an emergency. *Verifier´s action:*	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
included in the MR and assess whether these procedures have been implemented, when required		During the remote on-site visit, the verification team has checked the server to confirm the primary data and records stored are the most recent for the MR. The stored data are password protected and only authorized person could access. The database officer was interviewed to confirm how the data is applied in emergency case. *Conclusion:* By means of remote onsite assessment and checking the stored data, it can be concluded emergency respond plan is in place.		
C.6. Data archive and data protection ***(PS §56 b)*** Check whether all records of monitoring parameters are archived according to the monitoring plan. Assess further whether appropriate measures have been taken in order to avoid unintended or intended manipulation or loss of the measured data.	/MR/ /VPA/ /IM01/ /IM03/	*Description:* Chapter D.2 of the monitoring report also described how the data is archived and backed up. *Verifier´s action:* The data was kept in a project database at Bangladesh Bondhu Foundation. The data was backed up periodically onto hard disk media. During the remote on-site visit, the verification team has conducted interview and reviewed the records archiving method and procedures for the monitored parameters stated in MR and VPA-DD. Furthermore, the data stored at the server is password protected and only authorized personnel can access. *Conclusion:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		By means of remote onsite assessment and checking the stored data, it can be concluded data archiving and protection is in place and has been properly implemented.		
D. Data and parameters				
D.1. Data and Parameters fixed ex ante				
a) Compliance with registered VPA-DD ***(EB 75, Annex 7; D1)*** *Check whether the value applied is in compliance with the registered VPA-DD.*	/MR/ /GSPoA-DD/ /VPA/	By means of comparison of the MR with the registered PDD (or any revisions thereof) the verification team confirms that: ☒ all ex-ante data and parameters are in compliance with the registered PoA-PDD, VPA-DD and the applied methodology or any other tool. In this context CAR 1 findings have been identified.	~~CAR 1~~	OK
b) Compliance with the applied methodology ***(EB 75, Annex 7; D1)*** *Check whether the value applied is in compliance with the applied methodology or any other tool.*	/MR/ /GSM/	By means of comparison of the MR with the methodology the verification team confirms that: ☒ all ex-post and parameters are in compliance with the applied methodology and any other tool. In this context no findings have been identified.	OK	OK
D.2. Data and Parameters monitored				
D.2.1. $U_{p,y}$		**Usage rate in project scenario p during year y**		
a) Measurement / Determination method ***(VVS, §§ 233, 236)*** *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data*	/GSPoA-DD/ /GSVPA/ /SSP/	*Description:* The parameter was used to determine the usage rate of the ICS, in terms of fraction. It was used for calculation of baseline emissions or baseline net GHG removals by sinks. This parameter was measured by taking the proportion of number of project cookstoves	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
aggregation trails (from ODL to data aggregation level zero (DAL0)). *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPA-DD and the applied methodology.*	/SSS/ /MR/ /ER/ /DB1/ /S1/ /IM01/	found to be operational during the survey to the total number of samples surveyed. *Verifier´s action:* The key personnel interviewed on procedures, recording calculation and analysis of result and associated training. The usage records have been analyzed. *Conclusion:* The technical specification of the equipment was duly verified by the Verification Team and deemed accurate and acceptable.		
b) Accuracy and QA/QC Procedure ***(VVS, §§ 237-243)*** *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.*	/GSPoA-DD/ /GSVPA/ /SSP/ /SSS/ /MR/ /ER/ /DB1/ /S1/ /IM01/	*Description:* The parameter is derived from the Usage Survey. The MR is transparent in this regard. *Verifier´s action:* The value applied from the Usage Survey is cross-checked with GS registered VPA DD and ER calculation. QA/QC procedure is implemented. Project personnel and consultants were interviewed. *Conclusion:* Calculations in ER Worksheet were found consistent with MR and VPA DD.	OK	OK
c) Correctness ***(VVS, §§ 233, 236)***	/GSPoA-DD/	☒ Correct ☐ Not correct (initial assessment) *Description:*	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
Determine whether the value given in the monitoring report is correct or determined in a conservative manner. *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/GSVPA/ /SSP/ /SSS/ /MR/ /ER/ /DB1/ /S1/ /IM01/	The Verification Team cross checked the values and deemed accurate and acceptable. *Conclusion:* Applied value is appropriate.		
D.2.2. $N_{p,y}$		**Cookstove in the project database for project scenario p through year y**		
a) Measurement / Determination method (VVS, §§ 233, 236) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.*	/GSPoA-DD/ /GSVPA/ /SSP/ /SSS/ /MR/ /ER/	*Description:* The parameter is monitored to determine the baseline emissions. The number of ICS installed is tracked through ICS Installation Database and recorded appropriately by SZ Consultancy Services Limited. The monitoring (at time of installation) involves the recording ICS type, ICS unique serial number, Date of installation, End user details, address, location etc. The CPA implementer excludes the subsequent ICS from the ER calculations, in case an existing Bondhu Chulha is found at the household, thus ensuring that only one project device is credited per household. *Verifier´s action:* For the applied monitoring period no ICS were eliminated from the ER calculation on account of this. This is verified by the Assessment	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPA-DD and the applied methodology.		Team. The verification team remotely pulled random end user agreement records and compared the details with the information in the provided ICS installation database. *Conclusion:* The data applied could be verified with the installation database.		
b) Accuracy and QA/QC Procedure ***(VVS, §§ 237-243)*** *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.*	/GSPoA-DD/ /GSVPA/ /SSP/ /SSS/ /MR/ /ER/	*Description:* The team randomly selected households from the database to compare the information in the database with the actual stoves being used. The way of recording all stoves data (including end user detail) complies with the registered monitoring plan. *Verifier´s action:* The verification team remotely pulled random end user agreement records and compared the details with the information in the provided ICS installation database. The monitoring (at time of installation) involves the recording ICS type, ICS unique serial number, Date of installation, End user details, address, location etc. *Conclusion:* The data applied could be verified with the installation database	OK	OK
c) Correctness ***(VVS, §§ 233, 236)*** *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.*	/GSPoA-DD/ /GSVPA/ /SSP/ /SSS/ /MR/	☒ Correct ☐ Not correct (initial assessment) *Description:* The value is applied correctly. *Verifier´s action:* The CPA implementer excludes the subsequent ICS from the ER calculations, in case an existing Bondhu Chulha is found at the	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given. *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/ER/	household, thus ensuring that only one project device is credited per household. *Conclusion:* Applied value is correct.		
D.2.3. $DF_{b,stove,y}$		**Discount factor to account for the baseline stove use in project scenario during the year y**		
a) Measurement / Determination method ***(VVS, §§ 233, 236)*** *Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)).* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPA-DD and the applied methodology.*	/MR/ /ER/ /DB1/ /S1/ /IM01/	*Description:* The parameter is applied to determine stoves that are still operating. The parameter is measured ex- post through survey user feedback. The determination is based on survey of samples for all ICS. The sampling frame for the surveys included all ICS (domestic ICS). Simple random sampling was applied to each ICS separately. The ICS were randomly sampled from a list of all the participating ICS. *Verifier´s action:* The survey forms were verified by the Verification Team and deemed as complete and relevant with respect to the monitoring requirements. *Conclusion:* The measurement method was consistent with the registered monitoring plan of the VPA-DD and the applied methodology	OK	OK
b) Accuracy and QA/QC Procedure	/MR/ /ER/	*Description:*	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
(VVS, §§ 237-243) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.* *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.*	/DB1/ /S1/ /IM01/	Data was collected using survey questionnaire forms to enable surveyors to collect applicable and necessary information during monitoring visit to the sampled user. Procedures for sampling have been duly articulated in the monitoring report, and a sample of survey questionnaires furnished to DOE. *Verifier´s action:* The survey forms were verified by the Verification Team and deemed as complete and relevant with respect to the monitoring requirements. *Conclusion:* All applicable QA/QC procedures were met.		
c) Correctness ***(VVS, §§ 233, 236)*** *Determine whether the value given in the monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/MR/ /ER/ /DB1/ /S1/ /IM01/	☒ Correct ☐ Not correct (initial assessment) *Description:* Procedures for sampling have been duly articulated in the monitoring report, and a sample of survey questionnaires furnished to DOE. *Verifier´s action:* All the survey forms were cross verified with the ER sheet and installation database. The values reported in MR were found inconsistent with values calculated in ER worksheet. *Conclusion:* Applied value is correct.	OK	OK
D.3. SD Indicators Monitored				

Checklist Item (incl. guidance for the verification team)		Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
D.3.1. SDG 1	**No Poverty**		**$BSA_{Project}$ - Access to Basic Services (Number of ICS distributed under the baseline)**		
a) Measurement / Determination method VVS, §§ 389, 393, GS Annex I, GS Annex AC, GS Annex G) *Describe how the monitoring parameter was measured / determined. Focus primarily on the registered VPA-DD and GS / VPA Transition Request Documents and check what has been achieved relative to the baseline scenario.* *Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPA-DD and relevant GS Annexes.*		/GSPoA-DD/ /GSVPA/ /SSP/ /SSS/ /MR/ /S1/ /SD1/ /DB1/ /LHH/	*Description:* This is being monitored through monitoring surveys. *Verifier´s action:* During the remote assessments, the VVB interviewed to cross-check if the end users have access to the ICS. The VVB confirmed that the distribution of ICS ensures access of basic cooking services to the end user *Conclusion:* The monitoring of this SD indicator is in accordance with the GS VPA DD and the monitoring surveys.	OK	OK
b) Correctness and Scoring *Determine whether the monitoring method/value given in the sustainability monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered / VPA Transition Request Documents detailed assessment of the conservativeness of the approach used should be given.* *Score in accordance to Toolkit Annex I*		/MR/ /S1/ /SD1/ /DB1/ /LHH/	☒ Correct ☐ Not correct (initial assessment) *Description:* The value of the data in the monitoring report was based on Monitoring survey. *Verifier´s action:* The VVB confirmed that the distribution of ICS ensures access of basic cooking services to the end user, thus the contribution to 1 - Access to Basic Services is confirmed and were found acceptable. *Conclusion:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.		The data of the survey was found consistent.		
D.3.2. SDG 1 **No Poverty**		**$HHS_{Project}$ - % Users reporting money saving due to reduced fuel consumption in baseline**		
a) Measurement / Determination method ***VVS, §§ 389, 393, GS Annex I, GS Annex AC, GS Annex G)*** *Describe how the monitoring parameter was measured / determined. Focus primarily on the registered VPA-DD and GS / VPA Transition Request Documents and check what has been achieved relative to the baseline scenario.* *Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPA-DD and relevant GS Annexes.*	/MR/ /S1/ /SD2/ /DB1/ /IM01/ /IM06/	*Description:* This parameter was monitored by the PP during the survey. No ICS was replaced during the current monitoring period. *Verifier´s action:* The VVB verified the installation database and survey forms and cross verified the same during remote assessment. The end users also confirmed that the ICS helps in saving the fuel. Thus, the contribution to SDG 1 – "% HH reporting time/money saving due to reduced fuel consumption in baseline" is confirmed and found acceptable *Conclusion:* The monitoring of this SD indicator is in accordance with the GS VPA DD an surveys.	~~CAR 5~~	OK
b) Correctness and Scoring *Determine whether the monitoring method/value given in the sustainability monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered / VPA Transition Request Documents detailed assessment of the*	/MR/ /SD2/ /IM01/ /IM06/	☐ Correct ☒ Not correct (initial assessment) *Description:* The parameter is monitored based on the monitoring survey. The VVB has verified the submitted survey records and confirms the reported statement as accurate. No ICS was replaced during the current monitoring period. *Verifier´s action:*	~~CAR 5~~	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
conservativeness of the approach used should be given. *Score in accordance to Toolkit Annex I* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*		The survey report was reviewed and compared with the results of the remote onsite inspection and telephone interviews conducted by the verification team. *Conclusion:* The monitored value of this SD indicator is in accordance with the GS VPA DD.		
D.3.3. SDG 3 **Good Health and Well Being**		**$SPM_{HHProject}$ - % Users reporting reduction in smoke/PM emissions while cooking on improved stove in Project**		
a) Measurement / Determination method ***VVS, §§ 389, 393, GS Annex I, GS Annex AC, GS Annex G)*** *Describe how the monitoring parameter was measured / determined. Focus primarily on the registered VPA-DD and GS / VPA Transition Request Documents and check what has been achieved relative to the baseline scenario.* *Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPA-DD and relevant GS Annexes .*	/MR/ /S1/ /ER/ /SD3/ /LHH/	*Description:* The data was based on the Project survey results conducted. The data is derived from the monitoring survey. The monitoring survey results confirmed that all of the end user reported reduction in smoke levels which in turn confirms good health and wellbeing. *Verifier´s action:* The VVB also confirms this fact during its interview with randomly selected end-user. All end user confirmed reduction in smoke level while cooking on the ICS. *Conclusion:* The monitoring of the indicator is consistent with the GS VPA DD.	OK	OK
b) Correctness and Scoring	/MR/ /S1/ /ER/	☒ Correct ☐ Not correct (initial assessment) *Description:*	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Determine whether the monitoring method/value given in the sustainability monitoring report is correct or determined in a conservative manner. *In case of conservative approaches used in lieu of the monitoring as per registered / VPA Transition Request Documents detailed assessment of the conservativeness of the approach used should be given.* *Score in accordance to Toolkit Annex I* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/SD3/ /LHH/	Monitoring survey and associated supportive documents are assessed during remote assessments. *Verifier´s action:* The supportive documents are assessed. The VVB also confirms this fact during its interview with randomly selected end-user. All end user confirmed reduction in smoke level while cooking on the ICS. *Conclusion:* The database was verified and found data correct.		
D.3.4. SDG 5 **Gender Equality**		**$HHT_{Project}$ -% Users reporting time saving due to reduced collected fuel consumption / cooking time in project**		
a) Measurement / Determination method ***VVS, §§ 389, 393, GS Annex I, GS Annex AC, GS Annex G)*** *Describe how the monitoring parameter was measured / determined. Focus primarily on the registered VPA-DD and GS / VPA Transition Request Documents and check what has been achieved relative to the baseline scenario.* *Furthermore, verify the frequency of measurements as per the requirements.*	/MR/ /DB1/ /S1/ /SD4/ /IM02/	*Description:* During the survey, the PP has enquired about reduction in time saving due to reduced collected fuel consumption / cooking time in project while cooking on improved stove. The majority of the end users have confirmed that there was certain decrease in the fuel consumption. Verifier´s action: The VVB has verified the parameter by comparing the requirements of monitoring under GS. Conclusion: The monitoring of this SD indicator is in accordance with the GS.	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPA-DD and relevant GS Annexes. .				
b) Correctness and Scoring *Determine whether the monitoring method/value given in the sustainability monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered / VPA Transition Request Documents detailed assessment of the conservativeness of the approach used should be given.* *Score in accordance to Toolkit Annex I* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/MR/ /DB1/ /S1/ /SD4/	☒ Correct ☐ Not correct (initial assessment) *Description:* The data was based on the Project survey results conducted. The data is derived from the monitoring survey. The monitoring survey results confirmed reduction in the fuel requirement to cook food which in turn saves the time for women for the collection fuel *Verifier´s action:* The database was verified and found data correct *Conclusion:* The database was verified and found appropriate.	OK	OK
D.3.5. SDG 7 — Affordable and Clean Energy		**$ACS_{Project}$ - Access to affordable and clean energy (% of operating ICS units under Project)**		
a) Measurement / Determination method ***VVS, §§ 389, 393, GS Annex I, GS Annex AC, GS Annex G)*** *Describe how the monitoring parameter was measured / determined. Focus primarily on the registered VPA-DD and GS / VPA Transition Request*	/MR/ /DB1/ /S1/ /SD4/ /IM02/	Description: The data is derived from the monitoring survey. Verifier´s action: Majority of the end user confirmed that ICS promotes Affordable and clean energy services. Conclusion:	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Documents and check what has been achieved relative to the baseline scenario. *Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPA-DD and relevant GS Annexes. .*		The monitoring of the indicator is consistent with the GS		
b) Correctness and Scoring *Determine whether the monitoring method/value given in the sustainability monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered / VPA Transition Request Documents detailed assessment of the conservativeness of the approach used should be given.* *Score in accordance to Toolkit Annex I* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/MR/ /DB1/ /S1/ /SD4/	☒ Correct ☐ Not correct (initial assessment) *Description:* The training programs were organized for field staff and partner entrepreneurs was conducted during the monitoring period. *Verifier´s action:* The database was verified and found data correct. *Conclusion:* The data was verified and found correct	OK	OK
D.3.6. SDG 8 — ***Decent Work and Economic Growth***		**QE $IG_{Project}$ - Quantitative Employment and income generation (Number of person (male and female) hired under Baseline)**		
a) Measurement / Determination method ***VVS, §§ 389, 393, GS Annex I, GS Annex AC, GS Annex G)***	/MR/ /DB1/ /S1/	Description: The employment database was reviewed to cross-checked on the number of direct jobs created by the project activity Verifier´s action:	OK	OK

Checklist Item (incl. guidance for the verification team)		Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Describe how the monitoring parameter was measured / determined. Focus primarily on the registered VPA-DD and GS / VPA Transition Request Documents and check what has been achieved relative to the baseline scenario. *Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPA-DD and relevant GS Annexes. .*		/SD4/ /IM02/	Verifier´s action: The verification team has assessed the employment record Conclusion: The monitoring of the indicator is consistent with the GS .		
b) Correctness and Scoring *Determine whether the monitoring method/value given in the sustainability monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered / VPA Transition Request Documents detailed assessment of the conservativeness of the approach used should be given.* *Score in accordance to Toolkit Annex I* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*		/MR/ /DB1/ /S1/ /SD4/	☒ Correct ☐ Not correct (initial assessment) Description: The data is monitored with the employment record. Verifier´s action: The database was verified and found data correct. Conclusion: The data was verified and found correct	OK	OK
D.3.7. SDG 12	**Responsible Consumption and Production**		**$FC_{Project}$ - Average fuel consumption per HH in Project**		

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
a) Measurement / Determination method ***VVS, §§ 389, 393, GS Annex I, GS Annex AC, GS Annex G)*** *Describe how the monitoring parameter was measured / determined. Focus primarily on the registered VPA-DD and GS / VPA Transition Request Documents and check what has been achieved relative to the baseline scenario.* *Furthermore, verify the frequency of measurements as per the requirements.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPA-DD and relevant GS Annexes. .*	/MR/ /DB1/ /S1/ /SD4/ /IM02/ /TRG/	*Description:* The parameter is monitored based on the monitoring survey. The VVB has verified the submitted survey records and confirms the reported values are accurate. Verifier´s action: The VVB has verified the submitted survey records and confirms the reported value as accurate. Conclusion: The monitoring of the indicator is consistent with the GS.	OK	OK
b) Correctness and Scoring *Determine whether the monitoring method/value given in the sustainability monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered / VPA Transition Request Documents detailed assessment of the conservativeness of the approach used should be given.* *Score in accordance to Toolkit Annex I* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/MR/ /DB1/ /S1/ /SD4/ /TRG/	☒ Correct ☐ Not correct (initial assessment) Description: The VVB has verified the submitted survey records and confirms the reported value as accurate. Verifier´s action: The database was verified and found data correct. Conclusion: The data was verified and found correct.	OK	OK

ANNEX 2: STATEMENTS OF COMPETENCE OF INVOLVED PERSONNEL

TÜV NORD Certification

Statement of Competence

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

Mr. Prakash Kumar Mishra

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification)	2023-12-16
VCS / ISO 14064-2	Senior Assessor	2023-12-16

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
3.1	Energy demand

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TÜV NORD Certification

Statement of Competence

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

Mr. Kunal Rami

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2026-03-26
VCS / ISO 14064-2	Senior Assessor (Validation, Verification) Technical Reviewer	2026-03-26

Authorization status for technical areas within sectoral scopes:

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

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