Validation report for GS project activity	
Complete this form in accordance with the instructions attached at the end of this form.	
BASIC INFORMATION	
Title of the project activity	**Title**: Himalayan Rocket Stove Project in India **GS reference number**: GS 10797
Scale of the project activity	☒ Large-scale ☐ Small-scale
GS Version applicable	**GS4GG**
Version number of the validation report	05
Completion date of the validation report	01/02/2023
Version number of the PDD to which this report applies	6
Project participants	1. Himalayan Rocket Stove 2. Swiss Carbon Value Ltd.
Host Party	India
Applied methodology	Methodology applied: Technologies and Practices to Displace Decentralized Thermal Energy Consumption, Version 3.1
Certification Pathway (Project Certification/Impact Statements & Products	Impact Statements & Products
Activity Requirements applied:	GS4GG: Community Services Activity Requirements
Product Requirements applied:	GS VER
Regular/Retroactive:	Retroactive
Mandatory sectoral scopes	Sectoral scope 1: Energy industries (renewable - / non-renewable sources) Sectoral scope 3: Energy demand
Conditional sectoral scopes, if applicable	N/A
Estimated amount of SDG Impact Certified	SDG 13: 214,135 tCO_2e/year SDG 7: 138,598 households had access to affordable and clean energy SDG 15: Life on land: 207,495 tons of wood saved/year
Name and UNFCCC reference number of the DOE	4K Earth Science Private. Limited UNFCCC Ref No. CDM-E-0069
Name, position and signature of the approver of the validation report	

	S. Jagajothi Director

SECTION A. Executive summary

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4K Earth Science Private Limited has been contracted by 'Swiss Carbon Value Ltd.' to perform a validation of the GS project 'Himalayan Rocket Stove Project in India' (GS Ref. No. 10797) in India.

The scope of the validation is defined as an independent and objective review of the GS project design document, the project's baseline study, monitoring plan, and other relevant documents. The information in these documents is reviewed against the requirements of 'Gold Standard for Global Growth' in conjunction with the CDM Validation and Verification Standard for Project Activities (version 02), Project Cycle Procedure for Project Activities (version 02), Project Standard for Project Activities (version 02), Kyoto Protocol requirements and UNFCCC rules.

The report is based on the assessment of the GS project design document, application of standard auditing techniques including but not limited to desk review, follow up actions (e.g., electronic (Google Meet and Telephonic) interviews) and also the review of the applicable approved methodological and relevant tools, GS4GG guidance and CDM decisions.

The aim of the project is to provide a wide range of social, economic and environmental benefits for families and communities in India by installation of Himalayan Rocket Stove. The stoves are available in varying capacities, Eco mini, Eco1, Eco2 and Eco3 respectively as verified from the technical specification /06/. The installation of the highly efficient stoves significantly reduces the firewood consumption of households and/or homestays. This leads to a reduction of greenhouse gas emissions because of reduced firewood consumption.

Project activity will result in saving of 1,070,676, tCO_2e in first crediting period from 05/07/2019 to 04/07/2024 with an average saving of 214,135 tCO_2e/year.

The review of the project design documentation and the subsequent follow-up interviews have provided 4KES with sufficient evidence to determine the project's fulfilment of all the stated criteria. In our opinion, the project meets all applicable GS4GG requirements along with UNFCCC requirements for the CDM.

☒The project is recommended with a request for registration.
☐The project is not recommended for request for registration.

SECTION B. Validation team, technical reviewer and approver

B.1. Validation team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Validation findings
1.	Team Leader, Local Expert and Technical expert (TA 1.1, 3.1)	IR	Sharma	Chetan Swaroop	Central Office	x		x	x

B.2. Technical reviewer and approver of the validation report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer & Expert (TA 1.1, 3.1)	IR	Puratchikkanal	Ma Paa	Central office
2.	Approver	IR	Jagajothi	S	Central Office

SECTION C. Means of validation

C.1. Desk/document review

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The report is based on the assessment of the project design document, application of standard auditing techniques including but not limited to desk review, follow up actions (e.g., electronic (Google Meet or e-mail) interviews), and also the review of the applicable approved methodological and relevant tools, GS4GG guidance and CDM decisions.

All the documents used for arriving validation conclusion are listed in Appendix 03 and referenced accordingly in validation report.

C.2. Remote audit

As a result of the COVID-19 pandemic, taking into account the rules of relevant national and local authorities (local to the DOE offices as well as to locality of the site visits), World Health Organization (WHO) recommendations, policies of the DOE and other relevant travel restrictions and guidance (for example, a requirement to self-isolate upon return from specific countries), the DOE has skipped the on-site visit. However as per the COVID-19 Interim Measures by GS4GG, the DOE has used alternative measures for auditing like remote audits.

Considering the current COVID-19 world situation, Site visit is not expected to happen in near future. Hence the DOE has skipped the on-site visit.

As per para 4.1.1 (b) of COVID 19 Interim Measures /27/, Validation team has used the following alternative means for its assessment and to justify that they are sufficient for the purpose of validation.

- Complete desk review of the final GS-PDD (version 6.0, dated 01/02/2023) /02/, as well as all the supportive evidences have been checked by the Validation team.
- During the desk review, project stove technical description /06/, User survey /07/, End user agreement /11/, photographs /15/, lifetime supportive /19/, start date supportive /21/, thermal efficiency of project stoves /23/ and other relevant background documents were provided and assessed. The project description in the GS-PDD was verified from these documents.
- By taking follow up actions by conducted interview with PP/Local stakeholder to gather information about knowledge of project design, implementation, management system of the PA, project technology, Baseline assessment, stakeholder consultation, monitoring plan, start date, Methodology applicability, SDG impact etc. via Google Meet and telephone. Cross-checked evaluation under the scope of all information and references provided in PDD.
- Validation team has performed telephonic interviews with randomly selected project users to check the project technology. Total 10 users were interviewed over telephone in order to assess the usage of project technology.
- Validation team has performed telephonic interviews with randomly selected baseline users (from the baseline survey conducted by PP) to check the baseline of PA. Total 14 users were interviewed over telephone in order to assess the baseline appliances, baseline appliances usage etc.
- Cross checks between information provided by interviewed personnel (i.e. by checking sources) to ensure that no relevant information has been omitted.

Details of interviewees, topics covered and additional information presented in the below section "C.3 Interviews".

C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Collins	Russell	Founder, Himalayan Rocket Stove	21/12/2020	1. Baseline assessment 2. Issues in the PDD 3. Roles and responsibilities 4. Applicability of the methodology 5. Emission reduction 6. Monitoring requirement 7. Monitoring procedure 8. Data collection 9. Start date 10. LSC 11. CER Rights 12. Sustainable Development parameters 13. Grievance Mechanism 14. environmental impacts etc.	Mr. Chetan Swaroop Sharma (Google Meet interviews)
2.	Agrawal	Nitisha	Multiple roles, Himalayan Rocket Stove	21/12/2020		
3.	Negi	Abhishek	Production, Himalayan Rocket Stove	30/12/2020		
4.	Singh	Deepshikha	Project Coordinator, Swiss Carbon Value Ltd.	21/12/2020		
5.	Dinesh Singh	Karan	Local stakeholder	04/01/2021	Local stakeholder consultation	Mr. Chetan Swaroop Sharma (Telephonic interviews)
6.	Pal	Shivani	Local stakeholder	04/01/2021		
7.	Thakur	Urmila	Project	18/12/2020	Baseline	Mr. Chetan Swaroop

			technology user		technology, Project technology usage, Transfer of carbon rights, Mode of distribution etc.	Sharma (Telephonic interviews)
8.	RK Singh	Anil Chandel	Project technology user	18/12/2020		
9.	Singh	RK	Project technology user	18/12/2020		
10.	Chauhan	Randhir	Project technology user	20/12/2020		
11.	Priya	Madhur	Project technology user	18/12/2020		
12.	Chauhan	Surinder	Project technology user	20/12/2020		
13.	Zangpo	Lotus	Project technology user	20/12/2020		
14.	Singh	Ankit	Project technology user	20/12/2020		
15.	Amarnath	SV	Project technology user	20/12/2020		
16.	Pradhan	Vikash	Project technology user	20/12/2020		

Some of the questions asked from the project technology users with summary of their responses:

Questions	**Responses**
Q1. Is the project stoves in use?	As per the responses provided by the stove users, the answer was affirmative.
Q2. In which activity, project stoves are used.	As per the responses provided by the stove users, the project stoves were found in use for space heating and cooking.
Q3. What is the baseline technology?	As per the responses provided by the stove users, they were using local bukhari (Locally made) in the baseline.
Q4. Is the baseline technology still in use?	As per the responses provided by the stove users, few users were using the baseline devices as well.
Q5. What is the fuel used in baseline and project case ?	As per the responses provided by the stove users, they mainly used wood as a fuel.
Q6. Who distributed the project stoves? What was the mode of distribution?	The users mentioned that the stoves were distributed by following methods: 1. Himalayan Rocketstove representative 2. Online ordered 3. Directly collected

No.	**Interviewee**			**Date**	**Subject**	**Team member**
	Last name	**First name**	**Affiliation**			
1.	Thakur	Dilip	Baseline technology	12/08/2022	baseline appliances,	Mr. Chetan Swaroop Sharma

			Users		baseline appliances usage etc.	(Telephonic interviews)
2.	Sharma	Kuldeep	Baseline technology Users	12/08/2022		
3.	Tashi	Padma	Baseline technology Users	12/08/2022		
4.	Prasad	Gorak	Baseline technology Users	12/08/2022		
5.	-	Sonam	Baseline technology Users	12/08/2022		
6.	Chauhan	Usha	Baseline technology Users	12/08/2022		
7.	Negi	Sandeep	Baseline technology Users	12/08/2022		
8.	NAMGAIL	Dorje	Baseline technology Users	13/08/2022		
9.	Pandey	Manoj	Baseline technology Users	13/08/2022		
10.	-	Ramesh	Baseline technology Users	13/08/2022		
11.	DOWA	STANZIN	Baseline technology Users	13/08/2022		
12.	Singh	Sanjay	Baseline technology Users	13/08/2022		
13.	Shah	Hitesh	Baseline technology Users	17/08/2022		
14.	-	Naveen	Baseline technology Users	17/08/2022		

Some of the questions asked from the baseline technology users with summary of their responses:

Questions	**Responses**
Q1. Location of the baseline Users?	The users were selected from Ladakh, Himachal Pradesh and Uttarakhand as majority of the baseline users under the baseline survey (around 96%) were from there states.
Q2. Type of stove used?	As per the responses provided by the users, all of them use locally made stoves.
Q3. Purpose of stove. Is it used for both cooking and heating?	As per the responses provided by the users, the stoves were used for both cooking and heating.
Q4. What fuel is used on the cookstove.	As per the responses provided by the users, almost all of them use wood.
Q5. How much fuel is used in a day?	Fuel consumption varies from each user and the average comes around 50 kg wood per day.

C.4. Sampling approach

>>
VVB has checked the Baseline practice and usage etc. during the telephonic interview on a random basis from the baseline technology users selected from the baseline survey conducted by PP. The Number of samples i.e. 14 were selected as per table 2 of the standard “Sampling and surveys for CDM project activities and programmes of activities” 09.0 on random basis and interviews were conducted which is also as per para 54 of “Guidelines for sampling and surveys for CDM project activities and programmes of activities” 04.0. Validation team has checked the VVB samples results with the PP survey results and found in compliance. Hence baseline survey is accepted to the Validation team.

VVB had planned to apply the acceptance sampling. 4KES verification team carried out the random sampling from the PP’s records and check (using its professional judgment) the acceptability of the data for each record in the PP’s sample records against VVB records i.e. Data collected. The VVB has determined acceptance sample size based on the “Table. Sample size and acceptance number based on AQL, UQL, and producer and consumer risks” of standard “Sampling and surveys for CDM project activities and programmes of activities” version 09.0.

Using acceptance sampling approach, VVB checked the survey records from PP’s baseline survey with the VVB interview records.

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

1. Acceptable quality level (AQL) – 1.0%
2. Unacceptable Quality Level (UQL) – 20%
3. Producer risk -5%
4. Consumer risk -20%

VVB team has determined acceptance sample size based on the “Table. Sample size and acceptance number based on AQL, UQL, and producer and consumer risks” of standard “Sampling and surveys for CDM project activities and programmes of activities” version 09.0. From the above factors, the VVB determined the minimum sample size (n) as 14 and acceptance number (c) as 1. VVB randomly selected the users from the baseline survey.

The result of the survey is given below:

VVB Sample size	No of PP’s record beyond unacceptable level	Accepted
14	0	14

C.5. Clarification requests (CLs), corrective action requests (CARs) and forward action requests (FARs) raised

During the validation, 07 CL and 09 CAR were raised and successfully closed. 00 FAR were raised during this validation. Refer Appendix 4 of this report for more details.

SECTION D. Validation findings

D.1. Compliance with PDD form

Means of validation	Validation team checked the Project Design Document /02/ with latest version of PDD template available in the GS website (i.e., version 1.2) /28/.
Findings	CAR-09 is raised and successfully closed. Refer Appendix 4 of this report for more details.
Conclusion	The validation team confirms that the proposed project activity meets the

	requirement of GS4GG and the PDD is completed using the valid version of the PDD form appropriate to the type of project activity.

D.2. Description of project activity

Means of validation

The aim of the project is to provide a wide range of social, economic and environmental benefits for families and communities in India by installation of Himalayan Rocket Stove. The stoves are available in varying capacities, Eco mini, Eco1, Eco2 and Eco3 respectively as verified from the technical specification /06/. The installation of the highly efficient stoves significantly reduces the firewood consumption of households and/or homestays. This leads to a reduction of greenhouse gas emissions because of reduced firewood consumption.

Himalayan Rocket Stove are constructed and maintained by Himalayan Rocket stove as verified during the remote interview and technical specification of stoves /06/. The stove is compatible to be run on wood. The reduced consumption of firewood will lead to GHG emission reduction.
Under the project activity, project stoves use firewood. Separate emission reduction calculation will be done as per the applied methodology. It is imperative here to mention that HRS is not just a cookstove, in fact the stove performs a dual-purpose, saving fuel for both space heating and cooking as verified during the remote interview of PP/stove users and technical specification of stoves /06/.

The dimensions of the stove vary, depending on the area of the installation and the number of people. A detailed breakdown of the plants with the respective dimensions of the stove in 2019-20 and the proposed HRS stoves from 2020 to 2024 is given in table 1 below.

Table 1:Breakdown of the plants

	2019	2020	2021	2022	2023	2024	Total
Eco mini	0	1,629	3,911	9,775	19,551	10,045	44,911
Eco1	552	1,629	3,910	9,776	19,552	10,045	45,464
Eco2	216	1,282	3,074	7,686	15,372	8,335	35,965
Eco 3	78	460	1,105	2,763	5,525	2,327	12,258
Total	**846**	**5000**	**12,000**	**30,000**	**60,000**	**30,752**	**138,598**

Himalayan Rocket Stove is a finely designed technology which mixes air and burning gases together inside a vertical insulated combustion chamber that allows temperatures to rise to a point where near-complete combustion occurs. It is pertinent here to mention that the stove increases the room temperature steeply after an hour's heating after which it consumes far less firewood as compared to the initial feeding.

The dimensions of each type of HRS stove are as follows:

ECO mini: Height: 460mm, Width: 330mm, Length: 600mm
ECO 1: Height: 500mm, Width: 450mm, Length: 840mm
ECO 2: Height: 625mm, Width: 450mm, Length: 840mm
ECO 3: Height: 825mm, Width: 450mm, Length: 840mm

ECO1, Eco2 and Eco3 have a lifespan of nearly 20 years whereas, Eco mini has a minimum lifespan of 8 to 10 years at least. The stoves have an average thermal power of 37kW_{th} per unit. The technical specification /06/ and the lifetime /19/ of the stoves has been confirmed from the supportive documents.

The project falls under GS4GG Community Services Activity Requirements. Validation confirm that project activity has met the eligibility criteria of section 3.1.1 of GS4GG Principles & Requirements /25/.

GENERAL	**VVB Justification**

	ELIGIBILITY CRITERIA	
	(a) Types of Project	The project falls under 'End-Use Energy Efficiency' type.
	(b) Location of Project	The project will be implemented throughout India as confirmed with PP over remote audit.
	(c) Project Area, Project Boundary and Scale	The project falls under 'End-Use Energy Efficiency' type with emission reductions 214,135 tCO_2e per year with a maximum energy saving of 1468.03GWh/year. Hence, the project falls under Large scale projects. It is pertinent here to confirm that the project activity is not registered with under any other compliance, voluntary or any other scheme pertaining to emissions reductions and the benefits generated from the ERs as well as other SDG parameters as confirmed from PP during the remote audit.
	(d) Host Country Requirements	The project deals with reducing the dependence of people on non-renewable biomass to meet their thermal requirements and is in compliance with India's legal, environmental, ecological and social regulations.
	(e) Contact Details	Swiss Carbon Value Ltd. is the Project Representative and Himalayan Rocket Stove is the Project developer as verified from the company registration certificate /18/. The contact details of the project participants have been clearly defined under Appendix-I of the GS PDD /02/.
	(f) Legal Ownership	Implementation of the proposed project doesn't involve any activity that causes alteration of any resource; therefore, acquiring any specific legal right to do so is not applicable. However, the entitlement of the emission reductions generated by the project shall be transferred to the project owner from the end users through a signed covenant. Validation team has checked the end user agreement /11/ for the transfer of carbon rights.
	(g) Other Rights	Not applicable
	(h) Official Development Assistance (ODA) Declaration	There is no public funding involved for implementation which will result in a diversion of Official developmental Assistance. The same has been checked from the signed declaration /17/.
	Under section A.8 of the GS PDD /02/, PP has provided the assessment that project complies with 'gender sensitive' requirements which is found correct and acceptable. Project activity will result in saving of 1,070,676, tCO_2e in first crediting period from 05/07/2019 to 04/07/2024 with an average saving of 214,135 tCO_2e/year along with direct environmental, social and economic benefits.	
Findings	CAR-03, CAR-07, CAR-08, CL-04, CL-05, CL-07 are raised and successfully closed. Refer Appendix 4 of this report for more details.	
Conclusion	The assessment team confirms that GS PDD contains a transparent and accurate description of the project activity and provides reader a clear understanding of the project activity	

D.3. Application and selection of methodologies and standardized baselines

D.3.1. Application of methodologies and standardized baselines

Means of validation	The project activity utilizes the Gold Standard methodology 'Technologies and Practices to Displace Decentralized Thermal Energy Consumption V.3.1' /05/. Under section B.2 of the PDD /02/, project has been assessed for all the applicability conditions of the applied methodology.

Sr.No.	Condition	Justification	VVB Justification
1	The project boundary needs to be clearly identified, and the technologies counted in the project are not included in any other voluntary market or CDM project activity (i.e. no double counting takes place). In some cases, there may be another similar activity within the same target area. Project proponents must therefore have a survey mechanism in place together with appropriate mitigation measures so as to prevent any possibility of double counting.	The project boundary is the physical, geographical site of Himalayan Rocket Stoves located within India. The project is not registered with any other voluntary market thus, does not double count any of its emission reductions. Every unit sold has a unique ID attached to it. A carbon waiver is obtained from the users to restrict double counting of emissions.	The project boundary is clearly identified as described in section B.3 of the PDD /02/. Each project stove will have Unique ID to avoid double counting of emission reductions & thus are distinguishable. The same is verified from the user interviews and photos of project stove /15/. Project is not registered with any other voluntary market as confirmed during the remote interview with PP.
2	The technologies each have continuous useful energy outputs of less than 150kW per unit (defined as the total useful energy delivered from start to end of operation of a unit divided by time of operation). For technologies or practices that do not deliver thermal energy in the project scenario but only displace thermal energy supplied in the baseline scenario, the 150kW threshold applies to the displaced baseline technology.	The maximum energy output of the stoves implemented in the project activities is 37 kW_{th} per unit, below the indicated 150 kW_{th} limit per unit.	The maximum energy output of the project stoves implemented in the project activity is 37 kW_{th} per unit. Therefore the delivered energy output per unit is well below the threshold limit. Validation team has cross-checked the same from the energy output calculation in the ER sheet /04/ and found OK.
3	Using the baseline technology as a backup or auxiliary technology in parallel with the improved technology introduced by the project activity is permitted as long as a mechanism is put into place to encourage the removal of the old technology (e.g. discounted price for	Monitoring of the baseline technology usage will be done periodically. Detailed surveys will be conducted to get a feedback on the operation of the new technology and to measure the extent to which the baseline technology is still used. Along with this, the internal survey would include	The justification provided by the PP is convincing and hence in compliance with the applied methodology. The same was confirmed during the remote interviews.

	the improved technology) and the definitive discontinuity of its use. The project documentation must provide a clear description of the approach chosen and the monitoring plan must allow for a good understanding of the extent to which the baseline technology is still in use after the introduction of the improved technology. For example, whether the existing baseline technology is not surrendered at the time of the introduction of the improved technology, or whether a new baseline technology is acquired and put to use by targeted end users during the project crediting period. The success of the mechanism put into place must therefore be monitored, and the approach must be adjusted if proven unsuccessful. If an old technology remains in use in parallel with the improved technology, the corresponding emissions must be accounted for as part of the project emissions	questions related to the reason behind the continued usage of the baseline technology.	
4	The project proponent must clearly communicate to all project participants the entity that is claiming ownership rights of and selling the emission reductions resulting from the project activity. For technology producers and the retailers of the improved technology or the	The end user of each stove will confirm that they transferred the ownership of VERs to the Project owner by signing a carbon right waiver.	PP has clearly communicated to the stakeholders that PP will claim emission reduction ownership rights through Carbon rights transfer form (end user agreement) /11/. HRS is the manufacturer of the project technology and mostly distribute the project stoves to

		renewable fuel in use, this must be communicated by contract or clear written assertions in the transaction paperwork.		users through stores/online system and also with the help of dealers. The users are fully aware that carbon ownership rights will be transferred to the project implementer as indicated in user agreement /11/. Validation team has also checked the user agreement /11/ and found OK.
	5	Project activities making use of a new biomass feedstock in the project situation (e.g. shift from non-renewable to green charcoal, plant oil or renewable biomass briquettes) must comply with relevant Gold Standard specific requirements for biomass related project activities, as defined in the latest version of the Gold Standard rules. Furthermore, the following conditions apply: a. Adequate evidence is supplied to demonstrate that indoor air pollution (IAP) levels are not worsened compared to the baseline, and greenhouse gases emitted by the project fuel/stove combination are estimated with adequate precision. The project fuel/stove combination may	The project activity does not involve the making of new biomass feedstock. Therefore, this condition is not applicable. a) Indoor air pollution is not worsened by the project device as can be corroborated from the testing reports supplied with the supportive documents. Furthermore, considering the design of the project equipment given under section A.3. there is no impact on the indoor air quality as the flue gas duct helps in emitting the exhaust gas to the outside of the HH.	The project activity does not make use of new biomass feed stock hence this para is not applicable. a) Indoor air pollution is not worsened. The validation team has checked the ICS test report from third party "Shivalik Solid Waste Management Limited" in 2019 which mention that particulate matter from ICS (11 mg/Nm3) is much lesser than standard limits (150mg/Nm3).

		include instances in which the project stove is a baseline stove. b. Records of renewable fuel sales may not be used as sole parameters for emission reduction calculation, but may be used as data informing the equations in section 2.0 of this methodology. These records need to be correlated to data on distribution and results of field tests and surveys confirming (a) actual use of the renewable fuel and usage patterns (such as average fraction of non-renewable fuels used in mixed combustion or seasonal variation of fuel types), (b) GHG emissions, (c) evidence of CO levels not deteriorating (d) any further factors effecting emission reductions significantly.	b) The project activity does not involve renewable fuel so, this condition is not applicable.	b) response has been provided by the PP and found OK.
	It can be concluded by the assessment team that the project meets all the applicability criteria established in the methodology. Validation team has verified the same from the remote interviews.			
Findings	CL-03 is raised and successfully closed. Refer Appendix 4 of this report for more details.			
Conclusion	The applied baseline and monitoring methodology and relevant tool are valid and applicable to the project activity. The assessment team concludes that on the basis of observations made during remote auditing and review of the documents, the project activity meets the requirement of the applied methodology /05/.			

D.3.2. Project boundary, sources and GHGs

Means of validation

As per the applied methodology, Project proponents must provide clear definitions of project boundary and the target area:

a. The project boundary is the physical, geographical sites of the project technologies i.e. project stoves. The project ICS would be distributed in all over India.

b. The target area is clearly defined under the project activity.

The project boundary is the physical, geographical site of the use of Himalayan Rocket Stove throughout India. The emissions accounted from the various sources in the physical boundary of the project activity are as follows:

Source		GHGs	Included?	Justification/Explanation
Baseline scenario	Thermal Energy Need	CO_2	Yes	Important source of emissions
		CH_4	No	Insignificant source of emissions
		N_2O	No	Insignificant source of emissions
Project scenario	Thermal Energy Need	CO_2	Yes	Important source of emissions
		CH_4	No	Insignificant source of emissions
		N_2O	No	Insignificant source of emissions

The project will operate within the India which is a host country.

The information was validated during the remote auditing conducted by the validation team and same has been demonstrated in section B.3 of the PDD.

Findings

No finding raised.

Conclusion

The project boundary confirmed during the remote auditing along with the documentary evidence was found in conformance with the applied baseline methodology. All sources of GHG emissions required by the methodology have been included in the project boundary and are justified in reference to the project activity. There are no project emissions/leakage emissions of any sort which are not addressed by the applied methodology occurring because of the project activity.

D.3.3. Baseline scenario

Means of validation

The applied methodology requires the project participant to follow the following guidance:

A baseline scenario is defined by the typical baseline fuel consumption patterns in a population that is targeted for adopting the new project technology. Hence, this "target population" is a representative baseline for the project activity.

The baseline scenario is the usage of non-renewable biomass to meet the energy requirements of the users in India.
The proposed project activity aims to lower the GHG emissions by reducing the amount of firewood used by giving the same amount of energy as in the baseline scenario. A user survey /07/ was conducted to assess the usage of baseline fuel and its quantity which has been checked by the validation team and found OK. As per the survey, firewood was the main fuel used for heating spaces and/or cooking. Inefficient usage of firewood leads to indoor pollution along with decrease in forest land cover and increase in degraded land. Growing pressure from human and livestock population coupled with indiscriminate and illegal exploitation of forest resources are among factors that have further led to intensification of this problem. The details of the baseline survey are given in section below.

Stove Type	Firewood used in baseline scenario (kg/day)
Eco mini	36
Eco 1	36
Eco 2	62
Eco 3	79

	The project will use the calculated fNRB value for India /14/. fNRB calculation has been done by PP in accordance with the TOOL 30, version 3.0 /26/ which is still valid. Validation team has checked the fNRB calculation and found in accordance with the tool. In-line with Gold Standard requirements the Baseline Survey provides critical information on target population characteristics, fuel consumption, suppressed demand and leakage. In total 103 random households were selected across different states of India. The survey comprised of questions covering broad topic areas such as household characteristics, fuel use before and after the project. Baseline KPT would be done before 1st verification as confirmed from PP which is also in accordance with the applied methodology /05/, hence accepted to the validation team. The baseline survey results provided to the validation team and same was also confirmed by interviewing the baseline users selected randomly from the baseline survey and other stakeholders during the remote auditing.
Findings	CL-01 and CAR-05 are raised and successfully closed. Refer Appendix 4 of this report for more details.
Conclusion	The assessment of the applied baseline suggests that the baseline methodology has been correctly applied and the most appropriate and conservative baseline scenario has been selected: a) All data and values used by the project proponent have been listed and referenced in the PDD indication their sources; b) Relevant documents have been used for the establishment of baseline scenario, interpreted appropriately; c) All the relevant national and sectoral policies and circumstances have been considered; d) The applied methodology's applicability has been found in accordance and the baseline identification has been found appropriate by the assessment team. e) Justification has been provided in the revised PDD /02/ and found OK.

D.3.4. Demonstration of additionality

Means of validation	As described in section A.2 above, the project falls under GG4GG Community Services Activity Requirements. As per Annex-B Positive list under 'GG4GG Community Services Activity Requirements' the project meets the criteria 3 because the project activity is solely composed of isolated units where the users of the technology/measure are households or communities or institutions and where each unit results in <= 600 MWh of energy savings per year or <=600 tonnes of emission reductions per year as verified by the validation team. Hence the project activity is auto additional. **Prior consideration of the carbon revenues**: As the project is a retroactive project activity, hence the prior consideration is applicable for the project activity. As per GS4GG rule for retroactive projects, project documents need to submit to GS within one year of the project start date to meet prior consideration. In this case, the start date is 05/07/2019 and PP has submitted the initial project documents to GS on 02/07/2020. Therefore, the project meets the prior consideration requirements.
Findings	No finding raised.
Conclusion	Based on the local and sectoral expertise, the assessment team confirms that the projects in automatically additional. Hence project activity is additional.

D.3.5. Sustainable Development Goals (SDG) outcomes

Means of validation

The project contributes directly in achieving the SDG 7 &15 in addition to SDG 13 as required by Principle-1 of GS4GG.

1– Life on Land (SDG 15)
2- Affordable and clean Energy (SDG 7)
3-Climate Action (SDG 13)

Methodological choices/approach for estimating SGD 13 outcomes:
As per applied methodology "Technologies and Practices to Displace Decentralized Thermal Energy Consumption Version 3.1".

When the baseline fuel and the project fuel are the same i.e., project stoves will be using fuelwood.

In this case, the baseline emission factor and project emission factors are considered the same. The overall GHG reductions achieved by the project activity in year y are calculated in accordance to equation 1 of the applied methodology as follows:

$$ER_y = \sum_{b,p} (N_{p,y} * U_{p,y} * P_{p,b,y} * NCVb, _{fuel} * (f NRB,b, y * EF_{fuel, CO2} + EF_{fuel, nonCO2})) - \sum LE_{p,y}$$

Where:

Σb,p	Sum over all relevant (baseline b/project p) couples
$N_{p,y}$	Cumulative number of project technology-days included in the project database for project scenario p against baseline scenario b in year y
$U_{p,y}$	Cumulative usage rate for technologies in project scenario p in year y, based on cumulative adoption rate and drop off rate revealed by usage surveys (fraction)
$P_{p,b,y}$	Specific fuel savings for an individual technology of project p against an individual technology of baseline b in year y, in tons/day
$f_{NRB,b,y}$	Fraction of biomass used in year y for baseline scenario b that can be established as non-renewable biomass. (90%) (Calculated based on TOOL 30)
$NCV_{b,fuel}$	Net calorific value of the fuel that is substituted or reduced (IPCC default for wood fuel, 0.0156 TJ/ton)
$EF_{b,fuel,CO2}$	CO2 emission factor of the fuel that is substituted or reduced. 112 tCO_2/TJ for Wood/Wood Waste, or the IPCC default value of other relevant fuel
$EF_{b,fuel,nonCO2}$	Non-CO_2 emission factor of the fuel that is reduced
$LE_{p,y}$	Leakage for project scenario p in year y (tCO_2e/yr)

Leakage ($LE_{p,y}$): As per applied GS TPDDTEC methodology version 3.1, leakage emissions are accounted for the following sources:

a) The displaced baseline technologies are reused outside the project boundary in place of lower emitting technology or in a manner suggesting more usage than would have occurred in the absence of the project.
b) Non-project users who previously used lower emitting energy sources use the non-renewable biomass or fossil fuels saved under the project activity.
c) The project significantly impacts the NRB fraction within an area where other CDM or VER project activities account for NRB fraction in their baseline scenario.
d) The project population compensates for loss of the space heating effect of inefficient technology by adopting some other form of heating or by retaining some use of inefficient technology.
e) By virtue of promotion and marketing of a new technology with high efficiency, the project stimulates substitution within households who commonly used a technology with relatively lower emissions, in cases

where such a trend is not eligible as an evolving baseline.

PP has provided justification for each leakage source under the PDD and none of the source was found significant for the leakage emission. At the time of monitoring, PP shall be determining if the displaced technologies are used outside the project boundary in place of lower emitting technology through survey. Therefore, an observed leakage percentage of 5% of the baseline emissions was considered for the ex-ante estimation of the ERs.

The ex-ante estimation of emission reductions are as follows:

Year	Baseline estimate	Project estimate	Leakage estimate	Net benefit
Year 1	56249	33735	2812	19702
Year 2	171710	102984	8586	60140
Year 3	460374	276110	23019	161245
Year 4	1037692	622358	51885	363449
Year 5	1331556	798838	66578	466140
Total	3057581	1834025	152880	1070676
Total number of crediting years	5			
Annual average over the crediting period	611516	366805	30576	214135

Methodological choices/approach for estimating SDG 15 and SDG 7 outcomes:

The project outcomes of these SDG will be in accordance with the following approach:

SDG Indicator	Selected Parameter	Approach for estimation of the outcome
SDG 15/Indicator 15.1.2	Life on Land	Biomass Saved will be estimated based on the quantity of firewood used per day for cooking and heating water in the baseline & the project scenario by conducting WBT & KPTs following the Annex 4 & Annex 8 requirements. Implementation of HRS stoves eventually should decrease the firewood consumption compared to the baseline situation. This will reduce the pressure on the forest land in the project area. The use of project stove will reduce the quantity of firewood use tremendously in the long term hence, the decrease in firewood demand will eventually reduce the adverse impacts on local forests.
SDG 7/Indicator 7.1.2	Number of Himalayan Rocket Stoves	No specific calculations. No specific calculations are needed to be made for the parameter “Number of Himalayan Rocket stoves installed under the project activity”.

		installed under the project activity	

The details ER calculation is demonstrated in the separate ER spreadsheet /04/ by the PP and validated by the validation team with respect to correctness of all parameters and their sources.

Findings	CL-06 is raised and successfully closed. Refer Appendix 4 of this report for more details.
Conclusion	The assessment team confirms that: a) The selection of the equations of the applied methodology is appropriate. b) The assumptions used by the project have been clearly referenced and listed in the PDD/02/. c) The data included in the PDD has been adopted from authentic sources based on appropriate assumptions. d) Appropriate values are reasonably used relating to the project activity. e) The baseline methodology has been correctly applied for the calculation of emission reductions. f) The calculations are traceable and the values can be replicated using the data provided in the PDD.

D.3.6. Monitoring of SDGs

Means of validation

The monitoring plan for the project activity is provided in Section B.7 of the PDD /02/, based on the approved monitoring methodology. The monitoring plan is being correctly applied to the project activity and is in compliance with the requirements of the applied methodology.

Parameters available at the time of validation (ex-ante) are:

Relevant SDG Indicator	Parameter	Description	Unit	Value	Justification for the applied value
13 (Climate Action) Target: 13.2: Integrate climate change measures into national policies, strategies and	$f_{NRB,y}$	Fraction of biomass used in the absence of the project activity in year y that can be established as non-renewable biomass using nationally approved methods	%	90	Validation team has verified the calculation for fNRB /14/ and found correct. The validation team confirms that the calculation of fNRB is in line with the TOOL 30: Calculation of the fraction of non-renewable biomass, Version 03.0 /26/ which is still valid as verified from the UNFCCC website https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-30-v3.0.pdf/history_view. The Calculation is found correct. The sources have been checked and found correct. Forest survey report 2011 and 2021 have been used majorly which is an authentic source. The steps of calculation for fNRB are in accordance with the tool 30. Hence the value is found correct.

planning Indicated as Emission reduction in tCO_2e	$Ef_{b, fuel,CO2}$	CO_2 emission factor of the fuel that is substituted or reduced	tCO_2 /TJ	Wood= 112	Values taken from Table 2.2 and 2.3, Chapter 2, Volume 2 of the 2006 IPCC Guidelines and found consistent. https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_2_Ch2_Stationary_Combustion.pdf
	$Ef_{b,fuel, non- CO2}$	Non-CO_2 emission factor of the fuel that is substituted or reduced.	tCO_2 /TJ	0	As no non-CO_2 emissions occur in the baseline scenario, the value is verified to be correct.
	$NCV_{b,fuel}$	Net calorific value of fossil fuels used in the baseline scenario	TJ/ton	Wood= 0.0156	Validation team has verified the value from Table 1.2, Chapter 1, Volume 2 of the 2006 IPCC Guidelines and found consistent. https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf

Parameters that will be monitored (ex-post) are:

Relevant SDG Indicator	Parameter	Description	Unit	Monitoring
13 (Climate Action) Target: 13.2: Integrate climate change measures into national policies, strategies and planning Indicated as Emission reduction in tCO_2e	$P_{b,y}$	Quantity of fuel that is consumed in baseline scenario b during year y	kg/household-day	It would be Updated every two years as per the applied methodology. The sample size for the survey would be estimated based on sampling as verified by the validation team through interviews with PP.[1]
	$P_{p,y}$	Quantity of fuel that is consumed in project scenario p during year y	kg/household-day	It would be Updated every two years as per the applied methodology. The sample size for the survey would be estimated based on sampling as verified by the validation team

[1] Guideline on Sampling and surveys for CDM project activities and programmes of activities Version 4.0

					through interviews with PP.[2]
		$N_{p,y}$	Project technology-days in the project database for project scenario p through year y	Project technology days	This will be monitored continuously. The value will be based on the number of operational days. The average operational days have been taken as 365 and will be verified and confirmed during the verification.
		$U_{p,y}$	Usage rate in project scenario p during year y	%	It would be monitored annually as per the applied methodology. The sample size for the annual survey would be estimated based on sampling as verified by the validation team through interviews with PP.[3]
		$LE_{p,y}$	Leakage in project scenario p during year y	tCO_2e per year	It would be monitored Biennial as per the applied methodology. The sample size for the survey would be estimated based on sampling as verified by the validation team through interviews with PP.[4]
	SDG: Good health and well-being (SDG 15) Indicator: 15.1.2 Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type	Biomass saved	Amount of biomass saved in year y	tons/year	It would be monitored annually from sample survey as verified by the validation team through interviews with PP.

[2] Guideline on Sampling and surveys for CDM project activities and programmes of activities Version 4.0

[3] Guideline on Sampling and surveys for CDM project activities and programmes of activities Version 4.0

[4] Guideline on Sampling and surveys for CDM project activities and programmes of activities Version 4.0

SDG: Affordable and clean energy (SDG 7) Target 7.1: By 2030, ensure universal access to affordable, reliable and modern energy services Indicator: 7.1.2: Proportion of population with primary reliance on clean fuels and technology	Access to affordable and clean energy services	Number of Himalayan rocket stoves operational under the project activity	Numbers	It would be monitored annually through sampling survey to check that the project stoves are operational or not which has been verified by the validation team through interviews with PP.

It can be concluded that the monitoring plan has provisions for the real measurement of the parameter to reach to the achieved emission reductions.

After an intensive document review of the PDD and remote audit assessment by interviews with representatives about the monitoring procedures and structure, the validation team confirms that verification of emission reductions would be feasible. Also quality assurance and quality control procedures identified in the PDD will lead to accuracy and lesser uncertainty.

Sampling Plan:

The monitoring plan chalks out the relevant data to be monitored, collected, assessed and archived according to the methodology. Data from the monitoring procedures will be recorded in the electronic project database and summarised in an annual Monitoring Report. Data collection will be in the project scenario in accordance with the Standard on “Sampling and surveys for CDM project activities and programme of activities (Version08)".

Objectives and reliability requirements

The objective of the sampling effort is to meet the monitoring requirements set forth in the methodology ‘Technologies and Practices to Displace Decentralized Thermal Energy Consumption’ (Version 3.1). An annual, monitoring system will be set up for most parameters. However, for parameters which can be tracked on a biennial basis will be monitored once every two years.

Target population

The monitoring procedure is targeted to be applied on the households and homestays installed with HRS stoves, as identified through the Project Database managed by Himalayan Rocket Stove

Sampling method

A simple random sampling based on guidelines on “Sampling and surveys for CDM project activities and programme of activities Version 04” will be adopted for estimating the sample size for the monitoring surveys. Simple random sampling is suitable for homogenous populations.

Sample Size:

The minimum total sample size is 100, with at least 30 samples for project technologies of each age being credited in the project scenario which will be monitored at the time of monitoring.

Most interviews in a usage survey will be conducted in person and include expert observation by

	the interviewer, while the remainder may be conducted via telephone. For rest of the monitoring parameters, the following simple random sampling equation will be used to get the sample size taking 90/10 confidence level. $$n \geq \frac{1.645^2 N \times p(1-p)}{(N-1)\times 0.1^2 \times p^2 + 1.645^2 p(1-p)}$$ Where: n = Sample Size N = Total number of Households P = Our expected proportion 1.645 = Represents the 90% confidence required 0.1 = Represents the 10% relative precision **Sampling frame**: All the households or homestays with Himalayan Rocket stoves within the project boundary will be the sampling frame. **Quality Assurance/Quality Control:** A survey will be conducted by the PP. In order to avoid the possibility of low response and answer bias 10% oversampling will be applies by the PP.
Findings	CAR-01, CAR-02 and CAR-04 are raised and successfully closed. Refer Appendix 4 of this report for more details.
Conclusion	The assessment team confirms that the monitoring plan: a) Is in compliance with the requirements stated in the applied approved monitoring methodology b) Is feasible and can be implemented in the case of the project activity c) Can be implemented by the project participant.

D.4. Start date, crediting period type and duration

Means of validation	The start date of the project activity has been considered as 05/07/2019 i.e. the date of first batch of project stoves installed within the project activity. Validation team has checked the 1st invoice raised /11/ and found the mentioned start correct. PP has chosen a renewable crediting period of 5 years which is renewable two times. The crediting period start date of the project activity has been considered as 05/07/2019 which is found acceptable.
Findings	CL-02 is raised and successfully closed. Refer Appendix 4 of this report for more details.
Conclusion	Validation team confirm that start date and crediting period start date have been chosen correctly according to the GS4GG requirements. Also the chosen crediting period is as per the GS4GG requirements.

D.5. Local stakeholder consultation

Means of validation	The local stakeholder consultation was conducted by the project proponent on 02nd December 2020 at Hotel Stan Springdale, Main Bazar, Gumma Kotkhai, Shimla, Himachal Pradesh. The stakeholders were invited to this meeting through email, public and personal invitations. The meeting was attended by 10 the individuals comprising of both males and females. Stakeholders were provided an alternative of providing their feedbacks and comments via email. There were no negative comments received for the project activity during the local stakeholder consultation process. Validation team has checked the supportive document i.e. Minutes of LSC meeting, public invitation, personal invitations, Email to stakeholders, Attendance sheet, LSC evaluation forms and photos /09/ to confirm the LSC and found OK. Apart from that, stakeholders have also been invited for a stakeholder feedback

	round (SFR). The updated PDDs have been put for 2 months on the web for SFR since 15th October 2020. As discussed with PP, no comments have been received. The stakeholders were informed about this through email.
Findings	CAR-06 is raised and successfully closed. Refer Appendix 4 of this report for more details.
Conclusion	The remote audit interview with the stakeholders were undertaken and it can be confirmed that the project proponent takes into account the feedback of local people and no negative comments were received for the project activity.

D.6. Safeguarding Principles Assessment

Means of validation

PP has done the safeguarding principles assessment analysis and presented assessment in the GS PDD /02/. The assessment has been performed in accordance to requirements prescribed in the GS4GG Principles & Requirements, Version 1.2 & Safeguarding Principles & Requirements, Version 1.2.
The detailed assessment of safeguarding principle is provided below:

Assessment Questions/ Requirements	Justification of Relevance (Yes/potentially/no)	How Project will achieve Requirements through design, management or risk mitigation.	Mitigation Measures added to the Monitoring Plan (if required)	VVB Assessment
Principle 1. Human Rights				
1. The Project Developer and the Project shall respect internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights 2. The Project shall not discriminate with regards to participation	No	India adopted 'The protection of human rights Act' 1993 and the project is bound to follow the rules and regulation of host country. In addition, India has ratified 'International Convention on the Elimination of All Forms of Racial Discrimination :1969' 'International Covenant on Civil and Political Rights :1976', 'International Covenant on Economic, Social and Cultural Rights :1976' 'Convention on the Elimination of All Forms of Discrimination against Women :1981'. Therefore, the project developer and the project do respect nationally and internationally	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/employee and stakeholders were interviewed during the remote audit to confirm the same.

	and inclusion		proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind. India has ratified 'International Convention on the Elimination of All Forms of Racial Discrimination :1969', 'Convention on the Elimination of All Forms of Discrimination against Women :1981' in addition to its national human rights Act' 1993. Therefore, the project will not discriminate with regards to participation and inclusion.		
	Principle 2. Gender Equality				
	1. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women 2. Projects shall apply the principles of nondiscrimination, equal treatment, and equal pay for equal work 3. The Project shall refer to the country's national gender	No	5. The project does not and will not discriminate against individuals and employment of staffs is not based on gender, race, religion, and sexual orientation or on any other basis. Ministry of women & child development, govt. of India has taken various measures for gender equality/socio-economic development/empowerment of women. Out of these, the	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/employee and stakeholders were interviewed during the remote audit to confirm the same.

	strategy or equivalent national commitment to aid in assessing gender risks 4. (where required) Summary of opinions and recommendations of an Expert Stakeholder(s)		project positively contributes towards the national mission for empowerment of women through improvement of health and attaining vision for empowerment of women under national policy for women 2016 (Women participation will be ensured in the efficient use and spreading the use of solar energy, biogas, smokeless chulas and other technological applications to have positive influence on their life styles and a long term impact on meeting sustainable development goals) .protects against some		
	Principle 3. Community Health, Safety and Working Conditions				
	1. The Project shall avoid community exposure to increased health risks and shall not adversely	No	The project leads to safe working condition and will eventually lead to improvement in health as it will reduce the firewood and produces less smoke. Further, the	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/employee and

	affect the health of the workers and the community		project owner has a health and safety policy for its employees which is adhered to at all times.		stakeholders were interviewed during the remote audit to confirm the same.
	Principle 4.1 Sites of Cultural and Historical Heritage				
	Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture? >>	No	The project area covers households and user locations which does not have any structures, or objects with historical, cultural, artistic, traditional, or religious values or intangible forms of culture. Hence, not applicable.	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/employee and stakeholders were interviewed during the remote audit to confirm the same.
	Principle 4.2 Forced Eviction and Displacement				
	Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)? >>	No	The project area covers households and user locations which does not require relocation of people. Hence, not applicable.	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/employee and stakeholders were interviewed during the remote audit to confirm the same.
	Principle 4.3 Land Tenure and Other Rights				
	a. oes the Project require any change, or have any uncertainties related to land tenure arrangements and/or access rights, usage rights or land ownership? b. or Projects involving land use tenure, are there any uncertainties with regards to land tenure, access rights,	No	a) No, the project does not require any change to land tenure arrangements and/or other rights? b) No, the project does not involve any land use which will have issues related to land tenure or access right.	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/employee and stakeholders were interviewed during the remote audit to confirm the same.

	usage rights or land ownership?				
	>>				
	Principle 4.4 - Indigenous people				
	Are indigenous peoples present in or within the area of influence of the Project and/or is the Project located on land/territory claimed by indigenous peoples?	No	No, the project involves distribution of Himalayan Rocket Stoves. Therefore, it does not involve any influence towards indigenous people.	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/employee and stakeholders were interviewed during the remote audit to confirm the same.
	>>				
	Principle 5. Corruption				
	1. The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects	No	The project benefits reduction in firewood usage. There is no corruption provision in the project activity.	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/employee and stakeholders were interviewed during the remote audit to confirm the same.
	Principle 6.1 Labour Rights				
	1. The Project Developer shall ensure that all employment is in compliance with national labour occupational health and safety laws and with the principles and standards embodied in the ILO fundamental	No	The project does not require labour force for implementation of the project. Trained technicians are involved in production and installation of HRS stoves. Therefore, no forced labour is involved in the project. No child labour is involved.	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/employee and stakeholders were interviewed during the remote audit to confirm the same.

	conventions 2. Workers shall be able to establish and join labour organisations 3. Working agreements with all individual workers shall be documented and implemented and include: a) Working hours (must not exceed 48 hours per week on a regular basis), AND b) Duties and tasks, AND c) Remuneration (must include provision for payment of overtime), AND d) Modalities on health insurance, AND e) Modalities on termination of the contract with provision				

	for voluntary resignation by employee, AND f) Provision for annual leave of not less than 10 days per year, not including sick and casual leave. 4. No child labour is allowed (Exceptions for children working on their families' property requires an Expert Stakeholder opinion) 5. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures				
	Principle 6.2 Negative Economic Consequences				

	1. Does the project cause negative economic consequences during and after project implementation? >>	No	There are no negative economic impacts or potential risks to the local economy due to the project activity.	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/employee and stakeholders were interviewed during the remote audit to confirm the same.
	Principle 7.1 Emissions				
	Will the Project increase greenhouse gas emissions over the Baseline Scenario? >>	No	No, the project will reduce firewood usage. Hence, it will reduce greenhouse gas emissions over the baseline scenario.	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/employee and stakeholders were interviewed during the remote audit to confirm the same.
	Principle 7.2 Energy Supply				
	Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource (such as wood, biomass) that provides for other local users? >>	No	No, there is no provision for usage of energy from the local grid or power supply in the HRS stove. So, this condition is not applicable.	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/employee and stakeholders were interviewed during the remote audit to confirm the same.
	Principle 8.1 Impact on Natural Water Patterns/Flows				
	Will the Project affect the natural or pre-existing pattern of watercourses, groundwater and/or the watershed(s) such as high seasonal flow	No	No, Water in huge quantity is not required for the project which can impact the ground water level or any seasonal flow.	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/e

	variability, flooding potential, lack of aquatic connectivity or water scarcity? >>				mployee and stakeholders were interviewed during the remote audit to confirm the same.
	Principle 8.2 Erosion and/or Water Body Instability				
	a. ould the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion? b. s the Project's area of influence susceptible to excessive erosion and/or water body instability? >>	No	a. No, Water in huge quantity is not required for the project which can impact the natural patten. b. No, Water in huge quantity is not required for the project which can impact the stability of the waterbody.	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/e mployee and stakeholders were interviewed during the remote audit to confirm the same.
	Principle 9.1 Landscape Modification and Soil				
	Does the Project involve the use of land and soil for production of crops or other products? >>	No	No, the project does not involve any crop production.	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/e mployee and stakeholders were interviewed during the remote audit to confirm the same.
	Principle 9.2 Vulnerability to Natural Disaster				
	Will the Project be susceptible to or lead to increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or	No	No, the project activity takes place at individual households. There is no activity which can affect adversely the natural system to cause earthquake.	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/e

	other extreme climatic conditions?		landslides, erosion, flooding, draught or other extreme climatic conditions.		mployee and stakeholders were interviewed during the remote audit to confirm the same.
	>>				
	Principle 9.3 Genetic Resources				
	Could the Project be negatively impacted by or involve genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development, or take place in facilities or farms that include GMOs in their processes and production)?	No	Not applicable. The project does not involve any crop production or cultivation.	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/e mployee and stakeholders were interviewed during the remote audit to confirm the same.
	>>				
	Principle 9.4 Release of pollutants				
	Could the Project potentially result in the release of pollutants to the environment?	No	No, the project does not release any pollutants to the environment.	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/e mployee and stakeholders were interviewed during the remote audit to confirm the same.
	>>				
	Principle 9.5 Hazardous and Non-hazardous Waste				
	Will the Project involve the manufacture, trade, release, and/ or use of hazardous and non-hazardous chemicals and/or materials?	No	Not applicable. The project does not involve any production process	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/e mployee and stakeholders were interviewed during the remote audit to confirm the same.
	>>				

Principle 9.6 Pesticides & Fertilisers				
Will the Project involve the application of pesticides and/or fertilisers? >>	No	Not applicable. The project does not involve any crop production or cultivation.	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/employee and stakeholders were interviewed during the remote audit to confirm the same.
Principle 9.7 Harvesting of Forests				
Will the Project involve the harvesting of forests? >>	No	Not applicable. The project happens at individual households.	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/employee and stakeholders were interviewed during the remote audit to confirm the same.
Principle 9.8 Food				
Does the Project modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives? >>	No	Not applicable	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/employee and stakeholders were interviewed during the remote audit to confirm the same.
Principle 9.9 Animal husbandry				
Will the Project involve animal husbandry? >>	No	Not applicable	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/e

					mployee and stakeholders were interviewed during the remote audit to confirm the same.
	Principle 9.10 High Conservation Value Areas and Critical Habitats				
	Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified? >>	No	Not applicable	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/e mployee and stakeholders were interviewed during the remote audit to confirm the same.
	Principle 9.11 Endangered Species				
	a. Are there any endangered species identified as potentially being present within the Project boundary (including those that may route through the area)? b. Does the Project potentially impact other areas where endangered species may be present through transboundary affects? >>	No	Not Applicable	Not required	The justification provided by PP was found adequate based on the sectoral expertise of validation team. Further PP representative/e mployee and stakeholders were interviewed during the remote audit to confirm the same.
Findings	No finding raised.				
Conclusion	Validation team has carried out Google Meet interviews and remote auditing to cross check the safeguarding principle assessment conducted by the PP. GS VVB has also reviewed the initial GS local stakeholder consultation report and GS4GG PDD and found that the PP has assessed all the required critical safeguarding principle of United Nations in project activity. It has been found that the PA fulfil all the principles like Human Rights, Labor standards, environment protection, and anti-corruption.				

D.7. Stakeholder Inputs & Grievance Mechanism

Means of validation	Discussion of continuous input /grievance mechanism As part of the grievance mechanism in place, the local stakeholders are encouraged to approach the PP through following avenues i.e. in-person, e-mail

	and telephone to express their grievance, if any. The project proponent informed the users about the input and grievance mechanism. They were informed about the maintenance of a grievance expression book which would be maintained to have a continuous account of stakeholder's feedback. Whenever the users have grievances related to Himalayan Rocketstoves and the project as a whole, the first point of contact shall be Mr. Tanzin Rigzin who will further communicate the issue to the concerned authority. Stakeholders were provided below details to register their issues: Mr. Tanzin Rigzin Phone: +919805126096 Email: info@himalayanrocketstove.com Gold Standard Representative: info@goldstandard.org/help@goldstandard.ord Valid and adequate mode of communication were adopted and verified during the remote interview by the validation team.
Findings	No finding raised.
Conclusion	Validation team has checked the corresponding documents /13/ for the SF conducted and found OK. The validation team confirms that the project activity meets the Gold Standard requirements for stakeholder feedback/ grievance mechanism

SECTION E. Internal quality control

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The validation report prepared by team leader is reviewed by an independent technical reviewer (having competence of relevant technical area himself/herself or through an independent technical area expert) to confirm the internal procedures established by 4KES are duly followed and the validation report/opinion is reached in an objective manner and complies with the applicable CDM requirements.

The technical review team is collectively required to possess the technical expertise of all the technical area/sectoral scope the project activity relates to. All team members of technical review team are independent of the validation team. The independent technical reviewer(s) may approve or reject the draft validation report. The findings may be identified even at this stage, which needs to be satisfactorily resolved, before submit final report to GS. The final approval decision is taken by the Head of the DOE/Director.

The final decision is authorized by the Director, 4KES, once the report is finalized by the Head of the DOE/DOE Manager.

SECTION F. Validation opinion

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4K Earth Science Private Limited has been contracted by 'Swiss Carbon Value Ltd.' to perform a validation of the GS project 'Himalayan Rocket Stove Project in India' (GS Ref. No. 10797) in India.

The validation was performed in accordance with the GS4GG in conjunction with UNFCCC criteria for the Clean Development Mechanism, latest version of Validation and Verification Standard for Project Activities and related Standards/Guidance and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The project activity will result in reductions of greenhouse gas (GHG) emissions that are real, measurable and give long-term benefits to the mitigation of climate change. In our opinion, the project meets all relevant UNFCCC, GS & CDM criteria and all relevant host country criteria.

The review of the project design documentation and the subsequent follow-up interviews have provided validation team with sufficient evidence to validate the project. The project design document (Version 6.0, dated 01/02/2023) /02/ correctly applies methodology /05/.

Project activity will result in saving of 1,070,676, tCO_2e in first crediting period from 05/07/2019 to 04/07/2024 with an average saving of 214,135 tCO_2e/year. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achievable given the underlying assumptions do not change.

The monitoring plan provides for the monitoring of the SDG impact. The monitoring arrangements described in the monitoring plan are feasible within the project design, and it is validation team's opinion that the project participants are able to implement the monitoring plan.

In summary, it is validation team's opinion that the project activity "Himalayan Rocket Stove Project in India" in India meets all relevant GS & UNFCCC requirements. Hence, 4KES requests for the registration of the project activity under GS4GG.

Appendix 2. Abbreviations

Abbreviations	Full texts
BE	Baseline Emission
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CER	Certified Emission Reduction(s)
CL	Clarification request
CO2	Carbon dioxide
CO2e	Carbon dioxide equivalent
CP	Commitment Period
DOE	Designated Operational Entity
EB	Executive Board
EF	Emission factor
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GS4GG	Gold standard for global goals
MP	Monitoring Plan
PP	Project Participant
SDG	Sustainable development goal
UNFCCC	United Nations Framework Convention on Climate Change

Appendix 3. Competence of team members and technical reviewers

Certificate of Competence							
Name	☒ Mr. ☐ Ms.	**Chetan Swaroop Sharma**					
Qualification Procedure		*Fulfils the requirement as per the appointment of personnel procedure of 4KES for Validation and Verification of CDM/VCS/GS/GHG Projects.*					
Appointed to work as:							
		CDM Validator/Verifier	**Team Leader**	**Team Member**	**Technical Expert**	**Technical Reviewer**	**Financial Expert**
Appointed		Yes	Yes	Yes	Yes	Yes	No
Appointed Date		27-04-2021					
Authorized to work as Technical Expert for:							
Authorized Technical Area		**Sectoral Scope**		**TA Code**	**Technical Area within the scope**		
		Energy industries (renewable - / non-renewable sources)		1.1	Thermal energy generation		
		Energy industries (renewable - / non-renewable sources)		1.2	Renewables		
		Energy distribution		2.1	Energy distribution		
		Energy demand		3.1	Energy demand		
		Waste handling and disposal		13.1	Solid waste and wastewater		
		Waste handling and disposal		13.2	Manure		

Authorized to work as Local Expert for:	
Country/Countries	India
Compliance check by: Anand S. R.	

Certificate of Competence							
Name	☒ Mr. ☐ Ms.	**Ma Paa Puratchikkanal**					
Qualification Procedure		*Fulfils the requirement as per the appointment of personnel procedure of 4KES for Validation and Verification of CDM/VCS/GS/GHG Projects.*					
Appointed to work as:							
		CDM Validator/Verifier	**Team Leader**	**Team Member**	**Technical Expert**	**Technical Reviewer**	**Financial Expert**
Appointed		Yes	Yes	Yes	Yes	Yes	No
Appointed Date		27-04-2021					
Authorized to work as Technical Expert for:							
Authorized Technical Area		**Sectoral Scope**		**TA Code**	**Technical Area within the scope**		
		Energy industries (renewable - / non-renewable sources)		1.1	Thermal energy generation		
		Energy industries (renewable - / non-renewable sources)		1.2	Renewables		
		Energy demand		3.1	Energy demand		
		Construction		6.1	Construction		
		Waste handling and disposal		13.1	Solid waste and wastewater		
		Waste handling and disposal		13.2	Manure		
		Agriculture		15.1	Agriculture		
Authorized to work as Local Expert for:							
Country/Countries		India					
Compliance check by: Anand S. R.							

Appendix 4. Documents reviewed or referenced

No.	Title	References to the document
1.	First GS Project Design Document	Version 2.0, dated 25/09/2020
2.	Final GS Project Design Document	Version 6.0, dated 01/02/2023
3.	First GS ER Calculation Sheet	Corresponding to PDD version 02
4.	Final GS ER Calculation Sheet	Corresponding to PDD version 6.0
5.	Methodology applied: Voluntary Gold Standard: "Technologies and Practices to displace decentralized thermal energy consumption" methodology". Version 03.1	-
6.	Project technology technical description	-
7.	A user survey conducted (By HRS) to assess the usage of baseline fuel	-

	and its quantity	
8.	Project stove sales record template	OK
9.	**Local stakeholder consultation:** Minutes of local stake holder consultation process Public invitation Personal Invitation to stakeholders Email to stakeholders Attendance sheet of LSC LSC evaluation forms Photos	02/12/2020
10.	Local Stakeholder Consultation report	OK
11.	End user agreement (warranty card and Carbon rights transfer) and sales invoice	-
12.	Organization structure for the project activity	-
13.	Documents corresponding to Stakeholder feedback round: 1. The email sent to local NGOs and also to International NGOs 2. List of SFR participants	15/10/2020
14.	Fnrb calculation as per tool "Calculation of the fraction of non-renewable biomass, Version 03.0"	-
15.	Photographs of project stove and baseline practice	-
16.	1. Preliminary Review under GS4GG 2. Preliminary review approval mail from GS	OK 24/11/2020
17.	Declaration confirming that there is no diversion of ODA	01/07/2020
18.	Company registration certificate	01/03/2017
19.	Supportive for lifetime of the project stove by HRS (Manufacturer)	Jan 2021
20.	Grievance mechanism supportive (Copy of book)	-
21.	Supportive for the start date 05/07/2019	-
22.	HRS Quality checklist	-
23.	Thermal Efficiency of the project stove by HRS (Manufacturer)	15/04/2021
24.	CDM Project Standard for project activities CDM Validation and Verification Standard for project activities	Version 02 Version 02
25.	Gold standard Principles and Requirements, version 1.2	-
26.	TOOL 30: Calculation of the fraction of non-renewable biomass, Version 03.0	-
27.	COVID 19 Interim measures https://globalgoals.goldstandard.org/ru-2020-covid-19-interim-measures-update/	PUBLICATION DATE v4-17/05/2021 (VALID UP TO 31/12/2021)
28.	Project design document form (GS-PDD) https://globalgoals.goldstandard.org/t-prereview-design-document/	Version 1.2

Appendix 5. Clarification requests, corrective action requests and forward action requests

Table 2. CLs from this validation

CL ID	01	**Section no.**	D.3.3	**Date:** 07/02/2021
Description of CL				
1. The baseline survey is only done for few states. Considering the project boundary to be India, how the baseline survey is representative of whole project boundary. 2. Since the project ICS is used for both the purposes i.e. heating and cooking, how the baseline has considered this factor and ensure conservative emission reduction. 3. Baseline survey has been done only for three models i.e. Eco1, Eco2 and Eco3. PP need to clarify how the baseline & project fuel consumption for the model ECO mini has been considered and baseline has been established.				

PP response	Date: 04/06/2021
1. The project supplies the stoves in all parts of the country. However, the major sales happen in the states taken up in the baseline survey. 2. Since the stove is used for dual purpose. So, in cases where it was used in this fashion, the baseline wood consumption for heating purposes (which also was used for cooking in case of traditional bukhari) were only considered to remain conservative as cooking and heating can go hand in hand in the HRS stove. 3. ECO mini has a very slight variation in design as compared to ECO1 which make it handy to the customers while the output remains the same as ECO1. Therefore, the baseline scenarios has been assumed to be the same as ECO1 in the case of ECO mini.	
Documentation provided by PP	
-	
DOE assessment	**Date:** 05/06/2021
1. The baseline survey /07/ has been done in the following states (Ladakh, Himachal Pradesh, West Bengal, Uttarakhand, Arunanchal Pradesh, Karnataka) and the major sales is done in these states. The response provided by the PP is acceptable. Further the baseline KPT will be done before 1st verification as discussed with PP. Hence this part of CL is closed. 2. The justification provided by the PP is conservative and hence accepted to the validation team. For the baseline KPT, PP will only consider the space heating consumption from the baseline devices which is conservative. Hence this part of CL is closed. 3. The justification provided by the PP is acceptable which is also confirmed from the technical specification of the project stoves /06/. Further the project KPT will capture the actual fuel consumption from the project stoves. Hence this part of CL is closed.	

CL ID	02	Section no.	D.4	Date: 07/02/2021
Description of CL				
The start date mentioned under appendix 3 of the GS PDD i.e. 05/07/2019 is not consistent with the start date mentioned under section c.2.1 of the GS PDD i.e. 02/07/2019.				
PP response				**Date:** 04/06/2021
The start date of the project has been updated.				
Documentation provided by PP				
Refer Annex-3 of PDD for proof Revised GS PDD				
DOE assessment				**Date:** 05/06/2021
Correction has been done under section C.2.1 of the GS PDD /02/ which is found OK. The mentioned start date i.e. 05/07/2019 has been verified from the invoice /11/ for the first stove. Hence this CL is closed.				

CL ID	03	Section no.	D.3.1	Date: 07/02/2021
Description of CL				
1. PP need to clarify if there is a mechanism put into place to encourage the removal of the old technology (e.g. discounted price for the improved technology) and the definitive discontinuity of its use. (Eligibility criteria 3). 2. For technology producers and the retailers of the improved technology, CER rights must be communicated by contract or clear written assertions in the transaction paperwork. How the same is ensured. (Eligibility criteria 4).				
PP response				**Date:** 04/06/2021
1. As mentioned in section B.2, Monitoring of the baseline technology usage will be done periodically. Detailed surveys will be conducted to get a feedback on the operation of the new technology and to measure the extent to which the baseline technology is still used. Along with this, the internal survey would include questions related to the reason behind the continued usage of the baseline technology. Further the PO performs frequent site visits to check the working of the stoves and drive people to know about the economical and social benefits of the switch to a cleaner technology. 2. The PO is the technology producer while there are no retailers who procure profits by buying the stoves from the PO. Instead, there are distributors in every area who merely facilitate the distribution process and do not purchase the stoves per se. The transfer of VERs to the PO is communicated to the customers/end users in the transaction paperwork. The same is ensured by seeking a written declaration from the stove owner citing the transfer of his/her tights to carbon credits or any other impact resulting from the used of Himalayan Rocket stove.				

Documentation provided by PP	
Agreement (part of warranty card) Revised GS PDD	
DOE assessment	**Date:** 05/06/2021
1. Justification provided by the PP is found acceptable. Hence this part of CL is closed. 2. Justification provided by the PP is found acceptable. The same was also discussed during the remote interview with the representative of HRS. Hence this part of CL is closed.	

CL ID	04	**Section no.**	D.2	**Date:** 07/02/2021
Description of CL				
Section A.2 of the GS PDD: PP need to clarify how the project meets the eligibility criteria as per section 3.1.1 of GS4GG Principles & Requirements document and the relevant activity requirements document.				
PP response				**Date:** 04/06/2021
Section A.2 has been updated accordingly.				
Documentation provided by PP				
Revised GS PDD				
DOE assessment				**Date:** 05/06/2021
Corrections have been done in the revised PDD /02/ and found according to the requirement of section 3.1.1 of GS4GG Principles & Requirements Version 1.2 /25/. Hence this CL is closed.				

CL ID	05	**Section no.**	D.2	**Date:** 07/02/2021
Description of CL				
1. Since all the ICS are different types, PP need to clarify the target group for each ICS type. 2. PP shall provide detailed information in PDD, which states, and regions will be selected for distribution of cookstoves in 1st crediting period.				
PP response				**Date:** 04/06/2021
1. The target group of each type of stove depends on the area of the room/house/kitchen it will be placed in. So, if A1>A2>A3 of any particular room where the stove has to be installed then in A1 ECO mini or ECO1 will be installed, in A2, ECO2 will be installed while in A3 ECO3 will be installed. 2. The PO is supplying pan India based on the orders they get so it will be difficult to intimate already to which states they will be supplying in the next five years. The project boundary is the whole of India.				
Documentation provided by PP				
Revised GS PDD				
DOE assessment				**Date:** 17/08/2022
1. Clarification provided by the PP is found OK. Project stoves are distributed based on the customer requirements. Also the GS PDD /02/ has mentioned the target group as “households and/or homestays” which is found acceptable. Hence this part of CL is closed. 2. Clarification provided by the PP is acceptable. Hence this part of CL is closed.				

CL ID	06	**Section no.**	D.3.5	**Date:** 07/02/2021
Description of CL				
Under section B.6.2 of the GS PDD, PP need to justify each leakage source in detail and how they are not applicable to the project activity. Further PP need to clarify about using the baseline devices out of the household as verified from the interviews. How the leakage would be considered.				
PP response				**Date:** 04/06/2021
The relevant section has now been updated.				
Documentation provided by PP				
Revised GS PDD				
DOE assessment				**Date:** 05/06/2021
Under section B.6.2 of the GS PDD /02/, PP has mentioned “At the time of monitoring, PP shall be determining if the displaced technologies are used outside the project boundary in place of lower emitting technology through survey” which is found OK. Further the PP will calculate the leakage during the verification based on the monitored data and observations which is acceptable. Hence this CL is closed.				

CL ID	07	Section no.	D.2	Date: 07/02/2021
Description of CL				
Can ICS user still use the baseline stove/other fuel along with the project stove. What is the monitoring procedure for project and the baseline stoves. It was found that baseline devices/other fuel are used sometimes as verified from baseline survey and interviews.				
PP response				**Date:** 04/06/2021
Under the purview of the project scenario, this shall not be the ideal case. However, if there is any continued usage of the baseline stoves it shall be taken into account as leakage at the time of monitoring by means of surveys.				
Documentation provided by PP				
-				
DOE assessment				**Date:** 05/06/2021
Clarification provided by the PP is found acceptable. Leakage would be considered during verification based on the monitored data and observations. Hence this CL is closed.				

Table 3. CARs from this validation

CAR ID	01	Section no.	D.3.6	Date: 07/02/2021
Description of CAR				
The Usage rate used for emission reduction calculation is not as per the usage rate guidelines provided in Annex 10 of the applied methodology document. Please find detailed usage monitoring requirement and guideline here: https://globalgoals.goldstandard.org/407g-ee-ics-tpddtec-usage-guidelines/.				
PP response				**Date:** 04/06/2021
The usage rate has now been taken as 75% as per the usage rate guidelines provided in Annex 10 of the applied methodology document				
Documentation provided by PP				
DOE assessment				**Date:** 05/06/2021
Correction has been done in the revised PDD /02/. Further the Usage survey will be done during the verification and would be considered in the ER calculation. Hence this CAR is closed.				

CAR ID	02	Section no.	D.3.6	Date: 07/02/2021
Description of CAR				
The PP shall use latest field surveys, literature review and resource reference reports for the assessment of fNRB and re-assess the value and use conservative estimate. Further PP need to clarify how the calculation are incompliance with the latest version of the tool “TOOL30: Calculation of the fraction of nonrenewable biomass Version 03.0”.				
PP response				**Date:** 04/06/2021
At the time of preliminary review closure, the most recent version was TOOL 30 was version 2.0. The calculations have been performed based on that and the data sources which have been used are the most recent data sources available in the public domain.				
Documentation provided by PP				
Revised GS PDD and fNRB sheet				
DOE assessment				**Date:** 17/08/2022
Justification provided by the PP is found OK as checked from the UNFCCC website https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-30-v3.0.pdf/history_view. TOOL 30, version 3.0 is still valid. Hence this CAR is closed.				

CAR ID	03	Section no.	D.2	Date: 07/02/2021
Description of CAR				
It is not clear in the PDD how double counting will be avoided. The PP shall provide further information on the plan to avoid double counting as the geographical boundary covers entire nation and there is a possibility of overlapping with geographical boundary of other project activity.				

PP response	Date: 04/06/2021
As mentioned in section B.2, the project is not registered with any other voluntary market thus, does not double count any of its emission reductions. Every unit sold has a unique ID attached to it. A carbon waiver is obtained from the users to restrict double counting of emissions.	
Documentation provided by PP	
-	
DOE assessment	**Date:** 05/06/2021
Justification provided by the PP is found OK. Each project stove consists of a unique ID to uniquely identify. Also the project stoves have unique design compare to other stoves available in the market as checked from the technical specification of the stoves /06/. Hence this CAR is closed.	

CAR ID	04	Section no.	D.3.6	Date: 07/02/2021
Description of CAR				
The PP shall ensure that the monitoring plan is in line with the applied methodology.				
PP response				**Date:** 04/06/2021
The same has now been updated.				
Documentation provided by PP				
-				
DOE assessment				**Date:** 05/06/2021
Validation team has checked the updated GS PDD /02/ and found the monitoring plan in accordance with the applied methodology /05/. Hence this CAR is closed.				

CAR ID	05	Section no.	D.3.3	Date: 07/02/2021
Description of CAR				
The PP shall provide further information and clarification on the field test performed to determine fuel consumption in the baseline, the survey results should be provided in the PDD.				
PP response				**Date:** 04/06/2021
The baseline scenario has been set based on an internal survey done by the PO to get the ex-ante estimates. However, at the time of verification a KPT would be conducted in order to get the exact estimates. That is why $P_{b,y}$ has been kept as a monitoring parameter.				
Documentation provided by PP				
-				
DOE assessment				**Date:** 05/06/2021
The justification provided by PP is found OK. Baseline survey /07/ was done by PP which is used for the ex-ante calculation. Baseline KPT will be done before 1st verification which is also allowed as per the applied methodology /05/. Hence this CAR is closed.				

CAR ID	06	Section no.	D.5	Date: 07/02/2021
Description of CAR				
CAR corresponding to FARs raised during preliminary review. **FAR # 1**: PD is required to conduct Stakeholders Consultation Meeting and Stakeholders Feedback Round and provide with the Stakeholders Consultation Report prior to completion of validation and submission for design certification. The PD shall also provide the information in section E of the PDD. **FAR # 2**: Section A.8 (4M) of the PDD shall be revised after conducting stakeholder's consultation meeting. **FAR # 3**: The PP shall implement Grievance Mechanism for the project participants and provide the details in the relevant documents				
PP response				**Date:** 04/06/2021
FAR # 1: The Local Stakeholder Consultation was conducted on 02nd December 2020 while the SFR was initiated on 15th October 2020 for 2 months. The details of the same have been indicated in the Local Stakeholder Consultation Report. The PDD has also been updated accordingly. FAR # 2: The same has now been updated. FAR # 3: The PP has a constructive Grievance Mechanism which was communicated to the stakeholders during the Local Stakeholder Consultation Meeting, the details of which have also been provided in the LSC report.				

Documentation provided by PP	
Local Stakeholder Consultation Report. Revised GS PDD	
DOE assessment	**Date:** 05/06/2021
1. The LSC /09/ and SFR /13/ have been done successfully as verified from the supportive documents. Section E of the GS PDD /02/ is updated and found OK. Hence this FAR is closed. 2. Section A.8 of the GS PDD /02/ is updated and found OK. Hence this FAR is closed. 3. The justification provided by the PP is found acceptable. Validation team has verified the grievance mechanism from section E of the GS PDD /02/ and also during the remote interview of the PP/stakeholders. Hence this FAR is closed.	

CAR ID	07	**Section no.**	D.2	**Date:** 07/02/2021
Description of CAR				
1. The mentioned SDGs on page 1 of the GS PDD are not consistent with section B.6. 2. Under the GS PDD: PP has mentioned biogas digesters on number of places. 3. Under section A.1 of the GS PDD: The crediting period length is mentioned as 02/07/2019 to 02/07/2024 which is more than 5 years.				
PP response				**Date:** 04/06/2021
1. The same has now been updated. 2. The same has now been updated. 3. The same has now been corrected.				
Documentation provided by PP				
Revised GS PDD				
DOE assessment				**Date:** 05/06/2021
1. Correction has been done in the revised GS PDD /02/ and found OK. Hence this part of CAR is closed. 2. Correction has been done in the revised GS PDD /02/ and found OK. Hence this part of CAR is closed. 3. Correction has been done in the revised GS PDD /02/ and found OK. Hence this part of CAR is closed.				

CAR ID	08	**Section no.**	D.2	**Date:** 07/02/2021
Description of CAR				
Section A.5 of GS PDD: PP need to mention the technical details of the project technologies to be implemented under the project i.e. dimensions, life, thermal power, material etc.				
PP response				**Date:** 04/06/2021
The relevant section has now been updated.				
Documentation provided by PP				
-				
DOE assessment				**Date:** 05/06/2021
Corrections have been done in the revised GS PDD /02/ and found consistent with the supportive documents i.e. technical specifications /06/ and the lifetime of the project stoves /19/. Hence this CAR is closed.				

CAR ID	09	**Section no.**	D.1	**Date:** 07/02/2021
Description of CAR				
1. GS PDD template is not followed under following sections B.6.3, B.7.2, B.7.3, D.1, E.2 & E.3. 2. LSC section E of the GS PDD is not yet filled.				
PP response				**Date:** 04/06/2021
1. The relevant sections have been updated. 2. The relevant section has now been updated.				
Documentation provided by PP				
Revised GS PDD				
DOE assessment				**Date:** 05/06/2021
1. Corrections have been done in the revised GS PDD /02/ and found OK. Hence this part of CAR is closed. 2. Section E of the GS PDD /02/ is filled by PP and also verified from the LSC supportive documents /09/. Hence this part of CAR is closed.				

Table 4. FARs from this validation

No FAR raised during this validation.

~~**FAR ID**~~	~~xx~~	~~**Section no.**~~		~~**Date:** DD/MM/YYYY~~
~~**Description of FAR**~~				
~~**PP response**~~				~~**Date:** DD/MM/YYYY~~
~~**Documentation provided by PP**~~				
~~**DOE assessment**~~				~~**Date:** DD/MM/YYYY~~