VERIFICATION & CERTIFICATION REPORT

For the CDM-GS Project Activity

Kolar Biogas Project
In
India

GS REF. NO. 670
CDM REF. NO. 4058

5th Monitoring Period
01/01/2017 to 31/01/2017 (including both days)

REPORT NO.

CDM.18.VER.016

Date of this issue:	KBS Ref. No.: CDM.18.VER.016
Project Title:	Kolar Biogas Project
Client:	SKG Sangha Foundation myclimate – The Climate Protection Partnership
Monitoring Period:	01/01/2017 to 31/01/2017 (including both days)

Summary:

KBS Certification Services Pvt. Ltd. has performed the 5th periodic verification of the GS-CDM project "Kolar Biogas Project" and Gold Standard Ref. Number GS 670 & CDM Ref Number 4058. The verification includes confirming the implementation of the monitoring plan of the registered PDD and the application of the monitoring methodology as per CDM Methodologies AMS I.C ver 18, AMS-I. E ver. 3, AMS.III.R ver 1. A site visit was conducted to check the implementation of registered monitoring plan and verify the data submitted in the monitoring report. KBS confirms the following has been reviewed;

(a) The registered/revised CDM PDD, GS Passport and the monitoring plan and the corresponding validation opinion;
(b) The CDM & GS validation reports;
(c) The applied monitoring methodology(ies);
(d) All supporting documents

KBS Certification Services Pvt. Ltd. confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements.

Based on the information seen and evaluated we confirm that the implementation of the project has resulted in 50,144 tCO_2e emission reductions during the monitoring period 01/01/2017 to 31/12/2017 (including both the days). Also the sustainability monitoring confirms that the ratings of the SD indicators are in line with the GS passport.

Subject Group GS Verification	*Sectoral Scope(s):* *01, 15*	*Methodology:* AMS I.C ver 18, AMS.I.E Ver. 3 AMS III.R ver 1	
Verification Team:		***Monitoring report:***	
Team Leader	M P Kanal	First version	19/11/2018
Local Expert	M P Kanal	Final version	21/08/2019
Technical Expert (1.1), (15.1)	M P Kanal		
Independent Technical Reviewer Team		***Verification status:***	
Date:			
Technical Reviewer (1.1),	Sanjay Kandari	☐ Findings not closed.	
TR Expert (1.1)	Chetan Sharma	☐ Draft verification opinion	
Manager T&C		☒ Final verification opinion	
Date:	Chetan Sharma		
Authorized Signatory:			
Date:			
Managing Director	Kaushal Goyal	☒ No distribution without permission from client ☐ Unrestricted distribution ☐ Limited distribution	
Revision history:			
Date	*Rev. No.*		
03/09/2019	0		
02/11/2019	1		

Abbreviations

Abbreviations	Full texts
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CERs	Certified Emission Reductions
CH4	Methane
CL	Clarification Request
CO2e	Carbon dioxide equivalent
COP	Conference of Parties
CMP	Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
ERPA	Emission Reduction Purchase Agreement
ERs	Emission Reductions
FAR	Forward Action Request
FCN	Fair Climate Network
GHGs	Greenhouse Gas(es)
GWP	Global Warming Potential
HH	Household
ISO	International Organization of Standardization
IPCC	Intergovernmental Panel on Climate Change
KBS	KBS Certification Services Pvt. Ltd.
KP	Kyoto Protocol
LE	Leakage Emissions
MR	Monitoring Report
MP	Monitoring Plan
NGO	Non Governmental Organisation
PE	Project Emissions
PDD	Project Design Document
PS	Project Standard
PCP	Project Cycle Procedure
PPA	Power Purchase Agreement
QA/QC	Quality Assurance/Quality Control
UNFCCC	United Nations Framework Convention on Climate Change
VLV	Village Level Volunteers
VVS	Validation & Verification Standard

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1. INTRODUCTION

1.1 Objective

KBS has been commissioned by '"Foundation myclimate – The Climate Protection Partnership" to perform an independent verification of its registered GS-CDM project "Kolar Biogas Project" (GS Ref. Number GS 670 & UNFCCC Ref Number 4058) for the reported GHG emission reductions and reported SD parameter values for the given monitoring period 01/01/2017 – 31/12/2017 (both dates included). The Gold Standard projects must undergo independent third party verification and certification of emission reductions as the basis for issuance of Gold Standard Certified Emission Reductions (GS CERs).

The objectives of this verification exercise are, by review of objective evidence, to establish that:

- The project activity has been implemented and operated as per the registered/revised PDD and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place;
- Monitoring report and other supporting documents are complete;
- The actual monitoring systems & procedures and monitoring report conforms with the requirements of the approved monitoring plan and the approved monitoring methodology;
- The data is recorded and stored as per the monitoring methodology and approved monitoring plan.

1.2 Scope

The scope of the verification is the independent and objective review and ex post determination of the monitored reductions in GHG emission by the project activity along with assessment of GS indicators for sustainability criteria. The verification is based on review of monitoring report, supporting information and

(a) The registered/revised PDD, including the monitoring plan, GS Passport and the corresponding validation opinion(s);
(b) Previous verification reports, deviation requests, requests for revision of monitoring plan;
(c) Monitoring report for the monitoring period under verification including CER calculations sheets and all supporting documents;
(d) The applied monitoring methodology;
(e) Relevant decisions, clarifications and guidance from the CMP and the Gold Standard Board;
(f) All information and references relevant to the project activity's resulting in emission reductions
(g) Reference to the GS sustainability monitoring parameters

The project is assessed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures and related rules and guidance.

KBS has, based on the recommendations in the applicable version of Gold Standard Toolkit and CDM Validation and Verification Standard, employed a rule-based approach in the verification, focusing on the identification of significant reporting risks and the reliability of project monitoring.

1.3 Description of the Project Activity

Title of project activity	Kolar Biogas Project
Gold Standard Id	GS 670
Applied methodology	AMS I.C ver 18 AMS-I. E ver. 3 AMS III.R ver 1

Start date of crediting period	01/04/2012 (CDM Crediting period start date)
Project Participants:	SKG Sangha Foundation myclimate – The Climate Protection Partnership
Location of the project activity	Five Taluks – Srinivaspur, Kolar, Mulbagal, Malur, and Bangarapet in Kolar District, Karnataka, India.

The project activity is the installation of biogas plants (digesters) of 2 m^3 or 3 m^3 capacity each for single households in five Taluks – Srinivaspur, Kolar, Mulbagal, Malur, and Bangarapet in Kolar District, Karnataka India. The biogas units will be fed by cattle dung generated from the households. The biogas stoves will replace the traditional fire wood stoves used for cooking and heating purposes.

In baseline situation, households uses traditional fire wood stove which is inefficient. In the project situation the biogas stoves are used for cooking and hence completely avoiding the usage of traditional stoves which results in savings in non-renewable biomass. Thereby, it avoids the related CO2 emission from the avoidance of non-renewable biomass in cooking. The PP planned to install 9,380 biogas units out of which 8000 units were commissioned.

2. VERIFICATION TEAM

2.1 Verification Team Member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader/Technical Expert/Local Expert	IR	Kanal	M P	Central Office	x	x	x	x

2.2 Technical reviewer and approver

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	IR	Kandari	Sanjay	Central Office
2	Manager (Technical & Certification)	IR	Sharma	Chetan	Central Office
3	Approver	IR	Goyal	Kaushal	Central Office

3. METHODOLOGY

KBS follows a rule based verification approach, wherein, as a first step, the contract review is undertaken as per latest version of CDM Accreditation Standard. Subsequently, after the contract is signed, the monitoring report of the project activity is made available at Gold Standard registry as per CDM procedures in accordance with Gold Standard rules. Since the Gold Standard prescribes the application of CDM rules and guidelines which are followed along with the Gold Standard rules.

A desk review of the project documentation is undertaken, which is followed by an onsite visit by the members of verification team in accordance with the latest version of CDM AS. The verification protocol is filled by the verification team that is based on standard auditing practices and latest version of CDM VVS, to capture the assessment of applicable CDM requirements viz., latest version of CDM Project Standard, registered PDD, revised PDD, applied methodology/ies and/or tools and recent decisions. The verification protocol provides transparent means to record the observations and compliances by the verification team members and the nonconformities, if any. The verification protocol is an internal document, and is available on request. Following are the major milestones for the verification under consideration.

Duration of verification

Verification contract	10/08/2018
On site verification	20/12/2018 to 21/12/2018
Draft Verification Report	17/08/2019
Final Verification Report	03/09/2019

3.1 Review of Documentation

A desk review is undertaken, involving but not limited to,

- A review of the data and information presented to verify their completeness;
- A review of the monitoring plan and monitoring methodology, paying particular attention to the frequency of measurements and the quality assurance and quality control procedures;
- An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

The list of documents reviewed is included in the section ‘References’

3.2 Site Visits

A site visit is undertaken by members of verification team, involving but not limited to,

- An assessment of the implementation and operation of the proposed CDM GS project activity as per the PDD;
- A review of information flows for generating, aggregating and reporting the monitoring parameters;
- Interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the approved monitoring plan;
- A cross-check between information provided in the monitoring report and data from other sources such as plant log books, inventories, purchase records or similar data sources;
- A check of the monitoring equipment, including calibration performance and observations of monitoring practices against the requirements of the PDD and the selected methodology;
- A review of calculations and assumptions made in determining the GHG data and emission reductions;
- An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

- The site visit for this verification assessment was undertaken by M.P Kanal (Team Leader &Technical Expert for 1.1 and 15) and Local Expert and details are mentioned below;

No.	Interviewee		Date	Subject	Team member
	Name	Affiliation			
1.	Kumar S K	Kiran Umesha	20/12/2018	- General aspects of the project - Changes since validation / previous verification - Remaining issues from validation/ previous verification - Quality management system - Involved personnel and responsibilities - Training and practice of the operational personnel - Implementation of the monitoring plan - Monitoring data management - Involved personnel and responsibilities - Training and practice of the operational personnel - Implementation of the monitoring plan - Monitoring data management - Data uncertainty and residual risks - Procedural aspects of the Monitoring - Maintenance	M P Kanal
2	AV	Rajanna	20/12/2018	- Data Analysis - Issues in the MR - ER calculation	M P Kanal
4		Lakshmi	20/12/2018	- Verification of data collected through survey - Awareness about ownership of CERs - Working condition of bio-digester unit - SD parameters verification	M P Kanal
5		Muniyamma	20/12/2018		
6		Venktamma	20/12/2018		
7		Jothi	20/12/2018		
8		Shobha	20/12/2018		
9		Kanthamma	20/12/2018		
10		Manjula	20/12/2018		
11		Munirathnamma	20/12/2018		
12		Muniyamma	20/12/2018		
13		Venkatalakshmi	20/12/2018		
14		Venkataratnama	20/12/2018		
15		Sujatha	20/12/2018		
16		Akama	20/12/2018		
17		Parvathama	20/12/2018		
18		Bagyamma	21/12/2018		
19		Roopa	21/12/2018		

20		Chowdama	21/12/2018		
21		Amaravathi	21/12/2018		
22		Sakkamma	21/12/2018		
23		Amasayamma	21/12/2018		
24		Parvathamma	21/12/2018		
25		Santhamma	21/12/2018		
26		Munivenkatamma	21/12/2018		
27		Shobha	21/12/2018		
28		Sujathamma	21/12/2018		
29		Bhagyamma	21/12/2018		

3.3 Reporting of Findings

During the course of verification the findings may be raised as under;

CAR is raised if one of the following occurs:

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

Clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

FAR is raised during verification if the monitoring and reporting require attention and/or adjustment for the next verification period.

The verification report contains (section 7) all CARs, CLs and FARs raised during this verification in transparent manner and provides clear information of the issues raised, response received and its resolutions, including the changes in the documents.

3.4 Verification Assessment

Based on the desk review and site visit the team leader follows the verification protocol to identify and record the findings in the context of the project activity. The findings are communicated to the client in the findings document (section 7 of report). The project documentation, including responses to the findings is reviewed by the team leader in consultation with team members, wherever appropriate. The team leader prepares the draft verification report subject to closure or non closure of the findings.

3.5 Internal Quality Control

The draft verification 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 KBS are duly followed and the verification report/opinion is reached in an objective manner and complies with the applicable CDM requirements.

The independent technical reviewer may approve or reject the draft verification report. The findings may be identified even at this stage, which needs to be satisfactorily resolved, before the request for issuance is submitted to Gold Standard. The final decision is taken by the Manager Technical and Certification. The technical reviewer and Manager T&C can be same person.

The final decision is authorized by Managing Director, KBS once the report is approved by the Manager T&C.

3.6 Sampling Approach

During the on-site verification a sampling approach has been used by the verification team to verify the reported values for the monitored parameters as listed in the MR which are determined through sample survey by PP.
For the determination of DOE‟s acceptance sample size, verification team assumed the following factors:
1. Acceptable quality level (AQL) or the Level of Assurance- 1% (i.e. the proportion of discrepancies between the project participants‟ sample records and the DOE sample that are acceptable up to 1% limit)
2. Unacceptable Quality Level (UQL) – 15% (ie, the proportion of discrepancies between the project participants‟ sample records and DOE sample records that are unacceptable above 20% limit)
3. Producer risk -10% (ie, There is 10% chance that the DOE will wrongly reject the project participants‟ records of acceptable quality)
4. Consumer risk -10% (ie, There is 10% chance that the DOE will wrongly accept the project participants‟ records of records of unacceptable quality)

Verification team has determined acceptance sample size for all the sample survey parameters based on the standard “Sampling and surveys for CDM project activities and programmes of activities”. From the above assumed factors, the verification team determined the minimum sample size (n) as 25 and acceptance number (c) as 1.The same is intimated to PP prior to the site visit. During verification, verification team had conducted survey in 25 households of beneficiaries among the PP’s sample population of 285. Verification team checked the sustainability parameters monitored though sample basis. From the acceptance sample survey, verification confirms that none of the monitored value falls beyond unacceptable quality level. Hence verification team accepts all the sample data provided by PP.

3.7 Remaining Issues (FARs from Previous Validation or Verification)

Discussion:

This is the 5th periodic verification of the project activity. No FAR was raised in the previous verification report.

Findings: NA.

Opinion: No remaining issues pending

3.8 Compliance of project implementation with registered PDD

Discussion:

The project activity is the installation of biogas plants (digesters) of 2 m^3 or 3 m^3 capacity each for single households in five Taluks – Srinivaspur, Kolar, Mulbagal, Malur, and Bangarapet in Kolar District, Karnataka India. The biogas units will be fed by cattle dung generated from the households. The biogas stoves will replace the traditional fire wood stoves used for cooking and heating purposes.

In baseline situation, households uses traditional fire wood stove which is inefficient. In the project situation the biogas stoves are used for cooking and hence completely avoiding the usage of traditional stoves which results in savings in non-renewable biomass. Thereby, it avoids the related CO2 emission from the avoidance of non-renewable biomass in cooking. The PP planned to install 9,380 biogas units out of which 8000 units were commissioned.

The verification team has reviewed the biogas units commissioning records, application forms, end user agreements and non-working & repair log records. The verification team has observed at the site

that all physical locations of the biogas units and found that the details are correctly matching with the monitoring report and monitoring records maintained by PP. Thus the verification team concludes that the project activity was implemented and operated as per revised PDD. The verification team, based on the site visit and document review, was able to conclude that the project activity has been commissioned and implemented as per the revised PDD and that all physical features of the project are in place

Findings: No findings

Opinion:
The implementation and operation of the project activity is in compliance with the description of the revised PDD.

3.9 Evaluation of SD parameters

The verification team checked the sustainable development indicator parameters during the site visit and interview. Following include the discussion on any additional parameters that are monitored in accordance with the monitoring plan for sustainability indicators as referred in the revised Gold Standard Passport (version 4, dated 03/12/2015) and SD monitoring report version 01.1 (dated 21/08/2019).

Monitoring sample survey:

Some of the SD parameters & Emission reduction parameters are monitored through sample survey during the monitoring period. The verification team checked whether the PPs have applied a sampling approach to determine the monitored values. For the parameters determined through sampling, the verification team checked the sampling approach followed for each monitoring parameters to confirm the sampling plan mentioned in the revised approved PDD.

PP has conducted annual sample survey where the sample size is determined based on the on 95/10 confidence & precision level. As per the passport, the sample size for SD parameter sample survey is 500. However, PP has considered sample size of 285 for this monitoring period for the SD parameter monitoring survey along with sample survey of other emission reduction parameter. Though this is a deviation from monitoring plan provided in the passport, the sample size of 285 is found to be adequate for the SD parameter survey. Also as per the gold standard methodology 'Gold Standard Technologies and Practices to Displace Decentralized Thermal Energy Consumption' (methodology applicable for household biodigesters), the minimum sample size required for the population above 1000 is 100. Hence, verification team finds the sample size considered for the monitoring period as adequate for the population.
The parameters were monitored through stratified sample survey conducted by PP in 285 households selected randomly in each year The verification team confirmed that the sample size considered for the survey is found to be appropriate.

SD Parameters:
As per the sustainability monitoring plan in the approved revised GS passport, verification team evaluate all sustainable development indicators as followed table:

No	Indicator	Chosen parameter in the registered GS Passport and monitoring report	Way of monitoring	Verification Team's opinion	Verified score
1.	Air Quality	How many days in a year and how many hours a single burner is used per day the plant is functioning	Monitoring survey	The number of days in a year and number of hours per day the biogas single burner used are monitored through sample survey. Verification team checked all the sample survey sheets and found that the details provided in the excel sheet is correct. Verification team also conducted acceptance sample survey in 25 numbers of households and found no error in the parameter values monitored by PP. Hence, the verification team accepts the value provided by PP. As per the acceptance survey results, the beneficiaries uses the operational biogas stoves are used in 3.23 hours/dayin all 365 days in a year by the beneficiaries. This is not accounting for the non-operational stoves due to techincal issues. Also all households experience reduction in incidence of hospitalization during the monitoring period. From comparing the monitored values with baseline conditions mentioned in the passport, verification team concludes the project makes positive impacts on this indicator	+ (Positive)
		Reduction in incidence of hospitalization	Monitoring survey conducted at project households		
2.	Water quality and quantity	How much dung is fed into the biogas plant daily.	Monitoring survey	The amount of dung fed into the bio digester is monitored based on the sample survey. Though sample survey the capacity of basket in which dung is collected and the number of basket fed into the digester are monitored and the amount of dung fed in to the digester is estimated from it. Verification team checked all the sample survey sheets and found that the details provided in the excel sheet is correct. Verification team also conducted acceptance sample survey in 25 numbers of households and found no error in the parameter values monitored by PP. Hence, the verification team accepts the value provided by PP. As per the survey results, average of 49.50 kg dung/day is fed into the bio-digester in each households. This makes positive impact on Water quality and quantity compared to baseline as 49.50 kg dung per day is avoided from the open dumping which will affect the water quality during the rainy season. However, PP has rated this neutral in the passport for simplification.	0 (Neutral)
3.	**Soil condition**	a) Quantity of spent slurry disposed in	Training records Monitoring	The Quantity of spent slurry disposed in the crop fields and reduction in quantity of chemical fertiliser used in agricultural field are monitored through sample survey. Verification team	+ (Positive)

		the crop fields b) Reduction in quantity of chemical fertilisers used in the agricultural soils .	database	has checked all the sample survey sheets and found that the details provided in the excel sheet is correct. Verification team also conducted acceptance sample survey in 25 numbers of households and found no error in the parameter values monitored by PP. Hence, the verification team accepts the value provided by PP. As per the survey results, the average quantity of spent slurry disposed in crop field is 9.85 t/year and thereby reduction in chemical fertiliser used is about 88.8 kg/year in each project households. From comparing the monitored values with baseline conditions mentioned in the passport, verification team concludes the project makes positive impacts on this indicator.	
4.	**Biodiversity**	The amount of non-renewable fuel wood saved by the project.	Baseline Survey and Monitoring Survey	The amount of non-renewable fuel wood saved by the project is estimated from the baseline fuel wood consumption per households, average number of operating days and total number of bio-digesters installed. The baseline fuel wood consumption per household is verified from the PDD which is estimated though baseline survey. The average operating days in the monitoring period and the total number of digesters installed are verified though PP"s installation records. The total amount of NRB saved during the monitoring period by the project activity is estimated as 29,262 tonnes (37,516 t of fuel wood saving * F_{NRB} 0.78) which is verified to be correct. From comparing the monitored values with baseline conditions mentioned in the passport, verification team concludes theproject makes positive impacts on this indicator	+ (Positive)
5	**Quality of employment**	Total number of trainings given to different types of people involved in different activities and number of people trained	Recorded in SKGS database	Verification team checked all the training records including attendance register during the site visit and confirmed that the number of training reported in the GS MR are correct. From comparing the monitored values with baseline conditions mentioned in the passport, verification team concludes the project makes positive impacts on this indicator	+ (Positive)
6	**Livelihood of the poor**	Savings of money spent on fire wood for cooking, savings of money spent on kerosene for cooking and any additional income generation by the women through the saved time	Monitoring Survey	The money savings due to avoidance of firewood & kerosene for cooking is monitored through sample survey conducted among beneficiaries. Verification team checked all the sample survey sheets and found that the details provided in the excel sheet is correct. Verification team also conducted acceptance sample survey in 25 numbers of households and found no error in the parameter values monitored by PP. Hence, the verification team accepts the value provided by PP. As per the survey results, the	+ (Positive)

				average money saved from avoidance of wood & kerosene is Rs.829/year/household. From comparing the monitored values with baseline conditions mentioned in the passport, verification team concludes the project makes positive impacts on this indicator.	
7	**Access to affordable and clean energy services**	How many hours each beneficiary is using biogas stove per day	Monitoring survey	The number of hours per day the biogas single burner used is monitored through sample survey. Verification team checked all the sample survey sheets and found that the details provided in the excel sheet is correct. Verification team also conducted acceptance sample survey in 25 numbers of households and found no error in the parameter values monitored by PP. Hence, the verification team accepts the value provided by PP. As per he survey results, the beneficiaries uses the biogas stoves are used in 3.23 hours/day. From comparing the monitored values with baseline conditions mentioned in the passport, verification team concludes the project makes positive impacts on this indicator.	+ (Positive)
8	**Human and institutional capacity**	How many people were trained on a) construction b) monitoring and maintenance of biogas plant.	SKG Sangha training records	Verification team checked all the training records including attendance register during the site visit and confirmed that the number of training reported in the GS MR are correct. From comparing the monitored values with baseline conditions mentioned in the passport, verification team concludes the project makes positive impacts on this indicator	+ (Positive)
9	**Quantitative employment and income generation**	a) No of people employed due to the project activity	Employment records	During site visit, the verification team checked the employment record of the SKG Sangha and confirmed that the total number of people employed by the PP for the project activity is 11 which is consistent with the GS MR.	+ (Positive)
		b) savings due to project activity	Monitoring survey	Verification team also checked all the sample survey sheets to cross check the other parameters (ie, savings due to project activity, Existing local wages and wages paid by the project)and found that the details provided in the excel sheet are correct. Verification team also conducted acceptance sample survey in 25 numbers of households and found no error in the parameter values monitored by PP. Hence, the verification team accepts the value provided by PP. As per the survey results, the average money saved from avoidance of wood & kerosene is Rs.829/year/household. From comparing the monitored values with baseline conditions mentioned in the passport, verification	

				team concludes the project makes positive impacts on this indicator.	
		c) Existing local wages and wages paid by the project	PP records	The existing wages are confirmed through verification of monitoring survey records. And the wages paid by the project activity (Rs.500) is verified through PP"s records. From the monitored value, it is confirmed that the wages paid by the project activity is more than the existing local wages. Hence, the project makes positive impact on this indicator.	
10	**Balance of payments and investment**	Monetary savings due to decrease in Kerosene and chemical fertiliser use	Monitoring survey	Verification team also checked all the sample survey sheets to cross check the other parameters (ie, savings due to project activity, Existing local wages and wages paid by the project)and found that the details provided in the excel sheet are correct. Verification team also conducted acceptance sample survey in 25 numbers of households and found no error in the parameter values monitored by PP. Hence, the verification team accepts the value provided by PP. As per the survey results, the average money saved from avoidance of wood & kerosene is Rs.829/year/household. From comparing the monitored values with baseline conditions mentioned in the passport, verification team concludes the project makes positive impacts on this indicator.	+ (Positive)
11	**Technology transfer and technological self-reliance**	How many beneficiaries are trained	SKG data base , training records	Verification team checked all the training records including attendance register during the site visit and confirmed that the number of training reported in the GS MR are correct. From comparing the monitored values with baseline conditions mentioned in the passport, verification team concludes the project makes positive impacts on this indicator.	+ (Positive)

In summary, verification team confirms that all monitored sustainable development indicators are in accordance to the approved revised GS passport. It is also confirmed that all three categories (ie, Environment, Social Sustainability and Development and Economic and Technological Development) are rated as positive hence the project fulfils the eligibility requirement.

Opinion:

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

3.10 Assessment of Data & calculation of GHG Emission Reductions

The detailed assessment of GHG emission reduction is provided in the CDM verification report. As assessed by the verification team, the following details are confirmed for the reported monitoring period 01/01/2017 to 31/12/2017

	Amount	Unit
Baseline emissions (BE)	55,573	tCO_2e
Project emissions (PE)	5,310	tCO_2e
Leakage emissions (LE)	118	tCO_2e
Certified emission reductions (CERs)	50,144	tCO_2e

3.11 Recommendations / Forward action request

No FAR has been raised during this monitoring period.

4. VERIFICATION & CERTIFICATION STATEMENT

KBS Certification Services Pvt. Ltd. has been contracted by "Foundation myclimate – The Climate Protection Partnership'' to undertake independent verification and certification for the greenhouse gas (GHG) emission reductions and values of SD parameters reported from the GS CDM Project activity "Kolar Biogas Project" (GS ID 670 & UNFCCC Reference Number 4058) for the monitoring period 01/01/2017 to 31/12/2017 (including both dates) in the GS SD Monitoring Report Version 01 (first version) dated 19/11/2018.

The verification is based on the revised CDM PDD, GS Passport and the SD monitoring report for this project. Our verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakech accord, as well as those defined by the Gold Standard Board.

The management of the 'M/s SKG Sangha" and "Foundation myclimate" are responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions & monitoring of SD parameters on the basis set out within the final SD Monitoring Report version 1.1, dated 21/08/2019. The calculation and determination of GHG emission reductions from the project is the responsibility of the management of the 'M/s SKG Sangha" and "Foundation myclimate". The development and maintenance of records and reporting procedures are in accordance with the SD Monitoring Report.

It is our responsibility to express an independent GHG verification & SD parameter assessment opinion on the GHG emissions and on the calculation of GHG emission reductions from the project for the monitoring period 01/01/2017 to 31/12//2017 (including both dates) based on the reported emission reductions in the Final CDM Monitoring Report dated 30/05/2019 for the same period. The verification and conclusion about the GHG emission reductions are provided in the CDM verification report, version 01, dated 01/06/2019 which is submitted to UNFCCC. The assessment of SD parameters is provided in this report.

Based on an understanding of the risks associated with reporting GHG emissions data & SD parameter data and the controls in place to mitigate these, KBS planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence for us to give reasonable assurance that this reported amount of GHG emission reductions for the period is fairly stated.

KBS confirms the following;

Reporting period: 01/01/2017 to 31/12/2017 (including both dates)

Verified and certified emission in the above reporting period:

Vintage	Gold Standard Voluntary emission reductions (GS CERs)	Unit
01st January 2017 to 31st December 2017	50,144	tCO2e

Verification team also confirms the SD parameters are correctly monitored and all the monitored indicators rated as positive. Hence, the project results in sustainable development.

Location: Faridabad

Date: 08/11/2019

Kaushal Goyal

Managing Director

KBS Certification Services Pvt.Ltd.

5. REFERENCES

No.	Author	Title	References to the document	Provider
1	SKG Sangha	GS Monitoring Report,	Version 01, dated 19/11/2018	SKG Sangha
	SKG Sangha	GS Monitoring Report,	Version 01.1, dated 21/08/2019	SKG Sangha
2	SKG Sangha	ER Calculation Sheet	Version 01, dated 19/11/2018	SKG Sangha
	SKG Sangha	ER Calculation Sheet	Version 01.1, dated 30/05/2019	SKG Sangha
3	SKG Sangha	Approved PDD	Version 14 18/06/2015	Publically available
		GS Passport	version 4, dated 03/12/2015	Publically available
4	SGS	Validation Report	dated 28/06/2015	Publically available
5	SKG Sangha	PRC document page in UNFCCC	Web link UNFCCC	SKG Sangha
	TUV NORD	PRC validation report	Dated 15/07/2015	
6	UNFCCC	AMS.I.E – "Switch from Non-Renewable Biomass for Thermal Applications by the User"	Version 03	Publically available
		AMS.I.C – "Thermal energy for the user with or without electricity"	Version 18	
		AMS.III.R – "Methane recovery in agricultural activities at household/small farm level"	Version 01	
7	IPCC	1. 1996 IPCC Guidelines for National Greenhouse Gas Inventories: work book 2. 2006 IPCC Guidelines for National Greenhouse Gas Inventories: work book	Web Link	Publically available
8	UNFCCC	Kyoto Protocol (1997)	Web Link	Publically available
9	UNFCCC	Monitoring Report Form (CDM-MRFORM)	Version 6	Publically available
10	UNFCCC	CDM Project Standard for Projec Activity	Version 02	Publically available
11	UNFCCC	Standard: Sampling and surveys for CDM project activities and programme of activities	Version 07	Publically available
	UNFCCC	Guidelines for sampling and surveys for CDM project activities and programme of activities	Version 04	Publically available
12	UNFCCC	CDM Validation and Verification Standard for Project Activities	Version 02	Publically available
13	UNFCCC	Glossary "CDM terms"	Version 089.1	Publically available
14	SKG Sangha	Biogas basic record set: - Biogas application form - End user agreement for CER ownership	-	SKG Sangha

		- Completion certificate - Online monitoring solution		
15	SKG Sangha	Sample survey monitoring sheets for this monitoring period	-	SKG Sangha
16	SKG Sangha	Non-project household survey sheets for this monitoring period	-	SKG Sangha
17	SKG Sangha	Training Records: - Training conducted for end user - Training conducted for Mason - Training conducted for staffs Training conducted for Village Level Volunteers	-	SKG Sangha
18	SKG Sangha	Village level plant breakdown log sheets maintained by village level volunteers	-	SKG Sangha
19	SKG Sangha	Photographs and end user details for the biogas units constructed during previous monitoring period but not considered for the emission reduction during the previous monitoring periods.	-	SKG Sangha

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6. FINDINGS DOCUMENT

CL from this verification

CL ID	01	**Section no.**	Sustainability Monitoring parameters	**Date:** 19-08-2019
Description of CL				
Documents required: Submit all the the monitoring survey sheets to verify the SD parameter values? 1. Submit the proof of training and records maintained, as claimed?				
Project participant response				**Date:** 21/08/2019
1. *Monitoring survey sheet is submitted with the response* 2. The training records are submitted.				
Documentation provided by project participant				
Monitoring survey sheet *Training records.*				
DOE assessment				**Date:** 02/09/2019
The monitoring survey sheet and the computations in the excel sheets have been verified and found to be ok. The number of beneficiaries trained and the details of the conducted training programs have been verified from training records and found to be OK. The finding is closed.				

CL ID	02	**Section no.**	Sustainability Monitoring parameters	**Date:** 19-08-2019
Description of CL				
Biodiversity Please clarify and explain about the values used in this sustainability monitoring?				
Project participant response				**Date:** 21/08/2019
1. The monitoring result for the average functioning days of the 5th crediting period of a unit times number of units installed can be found in the 'Final ER Spreadsheet' sheet 'ER' cell M8. 2. The value of 8000 is the number of units installed. It can be found in the 'Final ER Spreadsheet' sheet 'Monitoring plan' cell F11.				
Documentation provided by project participant				
Excel sheet				
DOE assessment				**Date:** 02/09/2019
The excel sheet has been checked with the values provided and it is found that it matches to the functioning days of the MR period. The total digesters consideration at 8000 installed numbers is also ok. The finding is closed.				

CL ID	03	**Section no.**	Sustainability Monitoring parameters	**Date:** 19-08-2019
Description of CL				
Quality of Employment Provide all the training records. And also mention the dates of training conducted in the MR?				
Project participant response				**Date:** 21/08/2019

The training records are submitted. The revised MR is provided with the details of the trainings along with the dates.
Documentation provided by project participant
Revised MR
DOE assessment **Date:** 02/09/2019
The training records have been checked and found to be ok. The revised MR was checked to have corrected with the provided training dates. The finding is closed.

CL ID	04	**Section no.**	MR - Grievances	**Date:** 19-08-2019
Description of CL				
Grievance: Had the project received any grievances during the MR period? Please clarify?				
Project participant response				**Date:** 21/08/2019
No grivences were received. However, we have a grievance register to register any complaints and none received.				
Documentation provided by project participant				
Revised MR				
DOE assessment				**Date:** 02/09/2019
The grievances details were checked and could not find any complaints. The PP has a complaint register and grievance record. No complaints have been received. The finding is closed.				

CARs from this verification

NA

7. CERTIFICATE OF COMPETENCE

Personnel Name:		M.P. Kanal	
Qualified to work as:			
Team Leader	☒	Technical Expert	☒
Validator/Verifier	☒	Financial Expert	☐
Technical Reviewer	☒	Local Expert (India)	☒
Area(s) of Technical Expertise			
Sectoral Scope		Technical Area	
Energy industries (renewable/non-renewable sources)		TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar TA 1.2: Energy generation from renewable energy sources	
Energy demand		TA 3.1. Energy Demand	
Waste Handling and Disposal		TA 13.1 Waste Handling and Disposal	
Agriculture		TA 15.1 Agriculture	

Approved by (Manager C & T)	Sanjay Kandari
Approval date:	02/08/2017

Personnel Name:		**Sanjay Kandari**	
Qualified to work as:			
Team Leader	☒	Technical Expert	☒
Validator/Verifier	☒	Financial Expert	☒
Technical Reviewer	☒	Local Expert (India)	☒
Area(s) of Technical Expertise			
Sectoral Scope		**Technical Area**	
Energy Industries (renewable/non-renewable sources)		TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar	
Energy industries (renewable/non-renewable sources)		TA 1.2: Energy generation from renewable energy sources	
Energy demand		TA 3.1. Energy Demand	
Waste Handling and Disposal		TA 13.1 Waste Handling and Disposal TA 13.2 Manure	
Approved by (Manager C & T)		Akhilesh Joshi	
Approval date:		11/12/2015	

History of the document

Version	Date	Nature of revision	Reviewed by	Approved by
4.0	14/12/2013	Guidance included/improved	Manager CDM Quality 23/12/2013	Managing Director 23/12/2013
3.1	29/10/2012	Updated for EB69 Annex6	Manager CDM Quality 29/10/2012	Managing Director 29/10/2012
3.0	31/08/2012	Revised for VVS Track	Manager CDM Quality 08/09/2012	Managing Director 10/09/2012
2.0	21/12/2011	Comprehensively revised	Manager CDM Quality 21/12/2011	Managing Director 21/12/2011