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

Project Title:	Chanju I Hydro Electric Project
Monitoring Period:	24/02/2019 to 30/06/2019 (inclusive of both dates)
GS project ID:	GS - 7154
Internal ID:	A+SH_SYST_TQC_CDM_VER_PRC_GS_VAL_VER_10818
Customer:	Project Participant: IA Hydro Energy Private Limited Project Representative: EKI Energy Services Limited
Date:	17/09/2024
Revision:	01

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SUMMARY			
Reference No.	**Date** *(first version)*	**Version No.**	**Date** *(last version)*
A+SH_SYST_TQC_CDM_VER_PRC_GS_VAL_VER_10818	12/08/2024	2	17/09/2024

GS4GG Verification	
GS4GG Certified Product *(sought)*:	GS CER
GS4GG SDG Impact Statement *(sought)*:	Impact Certification

General Information	
Client	IA Hydro Energy Private Limited EKI Energy Services Limited
Project Title	Chanju I Hydro Electric Project
Project Participants	IA Hydro Energy Private Limited
Project Representative	EKI Energy Services Limited
Project Location	Himachal Pradesh, India
Contact Person	Mr. Shravan Kumar Goyel
Monitoring Period:	24/02/2019 to 30/06/2019 (inclusive of both dates)

GS4GG Principles and Requirements Version: 1.2 GS4GG Activity Requirements: RE Activity Requirements - Version 1.4 GS4GG Validation and Verification, version 1.0 Applied Methodology Version: ACM0002 - Grid-connected electricity generation from renewable sources - Version 20 Current Methodology Version: ACM0002 - Grid-connected electricity generation from renewable sources - Version 21	GS4GG Sectoral Scope: 2 UNFCCC CDM Sectoral Scope: 1 Technical Area: 1.2
Initial Monitoring Report Version: 01 Date: 08/02/2024	Final Monitoring Report Version: 05 Date: 17/09/2024
Project Design Document Version: Assessment team checked the GS PDD version 5 Dated: 14/02/2023	

Estimated Values for the Monitoring period for all SDG:

Sustainable Development Goals	**SDG Impact**	**Estimated values for this monitoring period**
13 Climate Action	GHG Emission Reduction	49,610 tCO_2e (127 days)
7 Affordable and Clean Energy	Clean Electricity supplied to grid	54,373.08 MWh
8 Decent Work and Economic Growth	Employments created	5 employment per year
	Training	1 training per year

Actual outcomes achieved for all SDG:

Sustainable Development Goals	**SDG Impact**	**Actual values achieved for this monitoring period**
13 Climate Action	GHG Emission Reduction	65,759 tCO_2e
7 Affordable and Clean Energy	Clean Electricity supplied to grid	72,072.76 MWh

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SUMMARY		
8 Decent Work and Economic Growth	Employments created	105 people employed (Skilled: 74, Un-Skilled: 29, Semi-Skilled: 2)
	Training	1 No's training
Selected Sustainable Development Goals (SDGs): 7; 8; 13		

Verification Summary

LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by IA Hydro Energy Private Limited & EKI Energy Services Limited to perform the 1st periodical verification of "Chanju I Hydro Electric Project" (Ref. No. GS 7154) applying the methodology ACM0002, Version 20 "Grid-connected electricity generation from renewable sources". The audit team of Applus+ Certification has performed the verification activity and respective details are embedded in further section.

The management of EKI Energy Services Limited are responsible for the preparation of the GHG emissions data and the reported GHG emission reductions.

A desk review and an onsite visit interview have been conducted to verify the data submitted in the monitoring report. Applus+ Certification confirms the following have been reviewed:

a. The GS PDD version 5.0 including the monitoring plan;
b. Monitoring report v.02 Template Guidelines;
c. The applied monitoring methodology;
d. GS4GG Verification and Verification Standard, version 1.0;
e. GS4GG guidelines and related Annex.
f. All information and references relevant to the project activity's resulting in emission reductions.

IA Hydro Energy Private Limited has set-up a grid connected run-of-river hydropower project, located in in the Northern power region and has been conceived for harnessing the power potential of Chanju Nallah, a tributary of Baira nallah and sub tributary of River Ravi, Chamba District of Himachal Pradesh State of India, with GPS coordinates as mentioned in below table. The same was confirmed with google earth images, document review and found to be correct.

Latitude	32°44'14" (32.7372) N to 32°45'43" (32.7619) N
Longitude	76°12'06" (76.2016) E to 76°14'52" (76.2477) E

The project involves the installation of three vertical-axis Francis turbine generating units, each with a capacity of 12 MW, totalling 36 MW of power. These turbines operate with a design head of 236.67 meters and a design discharge of 16.85 cubic meters per second. The diversion barrage creates a reservoir area of approximately 0.017 square kilometres, resulting in a power density of 2,117.64 W/m². The project was fully commissioned on 26/07/2017. The project uses hydro power to generate electricity and the same is exported to Indian grid (hereafter referred to as the Grid) through the sub-station at Kurthala, Himachal Pradesh.

The report and the annexed verification checklist describe a total of 07 findings which include:

- 04 Corrective Action Requests (CARs);
- 02 Clarification Requests (CLs);
- 01 Forward Action Requests (FARs).

Applus+ Certification confirms that the project is implemented in accordance with the validated GS4GG PDD. The monitoring plan complies with the applied methodology ACM0002 Version 20 and the GS4GG

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SUMMARY
principles and requirements version 1.2, the monitoring has been carried out in accordance with the monitoring plan. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the projects GHG emissions and the resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring and its associated documents. Based on the information reviewed and evaluated Applus+ Certification confirms that the implementation of the project has resulted in 65,759 tCO_2e emission reductions during period 24/02/2019 to 30/06/2019 (inclusive of both dates).

ASSESSMENT TEAM		
Team Members	**Type of Resource**[1]	**Organization** *(for Oes)*
Lead Auditor & Country Expert: Mr. Ishan Shrivastava	☐ IR ☐ EI ☒ OE	M/s True Quality Certifications Private Limited
Technical Expert & Country expert: Ms. Anjali Singh	☐ IR ☐ EI ☒ OE	M/s True Quality Certifications Private Limited (Outsourced entity)
Technical Reviewer: Ms. Karen Elizabeth Vega Nonalaya	☒ IR ☐ EI ☐ OE	LGAI Technological Center, S.A. (Applus+ Certification)
Note: In line with the GS Rule Update RU 2020 PR – PR V1.2 dated on 02/04/2020, the VVB hereby discloses that validation of the project activity was carried out by VVB with different team members.		

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

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ABBREVIATIONS	
ACM	Approved Consolidated Methodology
AM	Approved Methodology
Applus+ LGAI / Applus+	LGAI Technological Center, S.A. (Applus+ Certification)
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CDM VVS Version 03.0	CDM validation and verification standard for project activities, Version 03.0
CER	Certified Emission Reduction
CL / CR	Clarification Request
CM	Combined Margin
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
EIA	Environmental Impact Assessment
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GS4GG (or GS)	Gold Standard for Global Goals
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-Governmental Organization
SDG	Sustainable Development Goal
TAC	Gold Standard Technical Advisory Committee
OM	Operational Margin
PDD	Project Design Document
PP	Project Participant
UNFCCC	United Nations Framework Convention for Climate Change
VVB	Validation and Verification Body
VVS	Validation and Verification Standard

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1. INTRODUCTION

1.1 Objective

LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by IA Hydro Energy Private Limited & EKI Energy Services to perform the 1st periodical verification of "Chanju I Hydro Electric Project" applying the methodology ACM0002 Version 20 and GS4GG guidelines. The audit team of Applus+ Certification has performed the verification activity. Gold Standard projects must undergo periodic audits and verification of emission reductions as the basis for issuance of CDM Gold Standard CERs.

The objective of the verification work is to assess the compliance with the requirements of paragraph 62 of the CDM Modalities and Procedures as well as the GS4GG guidelines and relevant Principles and Requirements. According to this assessment Applus+ Certification shall:

- Ensure that the project activity has been implemented and operated as per the GS PDD and that all physical features (technology, project equipment, monitoring and metering equipment) of the project are in place;
- Ensure that the Monitoring Report and other supporting documents provided are complete, verifiable and in accordance with applicable GS4GG Validation and Verification Standard, version 1.0 for the project activities and Gold Standard (i.e., applicable GS4GG requirements);
- Ensure that the actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology;
- Evaluate the data recorded and stored as per the ACM0002 Version 20.

1.2 Scope

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

Based on the requirements in the GS4GG Validation and Verification Standard version 01 for the project activities as well as the GS4GG guidelines, Applus+ Certification has applied a rule-based approach for the verification of the project. The principles of accuracy, completeness, relevance, reliability and credibility were combined with a conservative approach to establish a traceable and transparent verification opinion.

The verification considers both quantitative and qualitative information on emission reductions. The verification also considers the monitoring of SDG goals as per the requirement of GS4GG guideline.

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

1.3 Description of the project activity

IA Hydro Energy Private Limited has set-up a grid connected run-of-river hydropower project, located in in the Northern power region and has been conceived for harnessing the power potential of Chanju Nallah, a tributary of Baira nallah and sub tributary of River Ravi, Chamba District of Himachal Pradesh State of India, with GPS coordinates as mentioned in below table. The same was confirmed with google earth images, document review and found to be correct.

Latitude	32°44'14" (32.7372) N to 32°45'43" (32.7619) N
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The project involves the installation of three vertical-axis Francis turbine generating units, each with a capacity of 12 MW, totalling 36 MW of power. These turbines operate with a design head of 236.67 meters and a design discharge of 16.85 cubic meters per second. The diversion barrage creates a reservoir area of approximately 0.017 square kilometres, resulting in a power density of 2,117.64 W/m². The project was fully commissioned on 26/07/2017. The project uses hydro power to generate electricity and the same is exported to Indian grid (hereafter referred to as the Grid) through the sub-station at Kurthala, Himachal Pradesh.

The project will replace anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 142,582 tCO_2e per annum, thereon displacing 156,272 MWh/year unit of electricity from the hydro power plants connected to the Indian grid (hereafter referred to as the Grid) through Himachal Pradesh State Electricity Board Ltd., which is mainly dominated by thermal/ fossil fuel-based power plant.

The purpose of the project activity is to generate electricity and sale to the different State Electricity Load Dispatch Centre of India though Indian Grid. The project activity displaces an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid and thereby has resulted in reduction of the associated CO_2 emissions. The monitoring of emission reduction and sustainable development indicators has been carried out in accordance to respective GS PDD. During monitoring period, the GHG emission reductions achieved from the project activity 65,759 tCO_2e, by generating 72,072.76 MWh electricity from the Hydro power plant.

Important Key event dates (Chronology)

Event	Date	References
CDM registration date	27/05/2015	UNFCCC website[2]
Commissioning Date	26/07/2017	Commissioning Certificate
Consent to Operate	17/02/2018	CTO letter issued by Himachal Pradesh State Pollution Control Board
Approval of PRC	17/02/2019	Reference: PRC-10153-001[3]

[2] https://cdm.unfccc.int/Projects/DB/TUEV-SUED1431953233.8/view
[3] https://cdm.unfccc.int/PRCContainer/DB/prcp452143904/view

First Monitoring Period under CDM Issued	26/07/2017 to 30/06/2019	CDM website[4]
First Monitoring period under GS	24/02/2019 to 30/06/2019	Refer to this report * The project initially contracted with Applus+ Certification for joint validation and verification of project activities under GS4GG requirements. The VVB conducted an on-site inspection for both aspects on 24/02/2021 and 25/02/2021. Although the joint validation and verification audit was completed, the project proponent decided to proceed with the validation first. Consequently, the project activity received GS validation approval on April 3, 2023, with a crediting period of seven years, following a renewable cycle that can be renewed twice. Subsequently, the project proponent re-engaged Applus+ for verification, prompting a new VVB team to plan another site visit on 10/05/2024, to assess any inconsistencies in project implementation since the initial site visit in February 2021. The ongoing verification covers the monitoring period from 24/02/2019 to 30/06/2019. Since the first site visit for verification occurred on 24/02/2021 and 25/02/2021, the project proponent is eligible to claim retroactive credits for two years from that date, i.e., February 24, 2019, in the ongoing verification. This has been approved by GS via Clarification Request number **CL_235, dated April 2, 2024.**

2. METHODOLOGY

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

- Activities associated with all the sources contributing to the project emissions and emission reductions, including leakage if relevant;
- Protocols used to estimate or measure GHG emissions from these sources;

[4] https://cdm.unfccc.int/Projects/DB/TUEV-SUED1431953233.8/iProcess/Applus1564303354.24/view

- Collection and handling of data;
- Controls on the collection and handling of data;
- Means of verifying reported data; and
- Compilation of the monitoring report.

Applus+ Certification performed risk-based assessment of the parameters and data collection and handling processes for each of those parameters, describes the verification approach and the sampling plan.

In the 2nd stage, Applus+ Certification verified the implementation of the monitoring plan and the data presented in the Monitoring Report for the period in question. This involved an onsite audit and a desk review of the Monitoring Report. This Verification Report describes the findings of this assessment.

2.1 Appointment of the assessment team

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

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

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

- Lead Auditor (LA).
- Auditor (A).
- Technical Expert (TE).
- Technical Reviewer (TR).
- Financial Expert (FE)
- Local Support (LS)
- Any of the above-mentioned roles in training (iT, e.g. AiT for auditor in training)

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

Name	Role	SS / TA Coverage	Financial aspect	Host country experience	Onsite Visit
Mr. Ishan Shrivastava	Lead Auditor / Country expert	YES	NA	Yes	No
Ms. Anjali Singh	Technical Expert/	YES	NA	YES	Yes

	Country Expert				
Ms. Karen Elizabeth Vega Nonalaya	Technical Reviewer	YES	NA	NA	No

The complete list of CVs is included as Appendix 2 of this report.

2.2 Document review

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

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

2.3 On site assessment and follow up interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Sambyal	Himanshu	Powerhouse Incharge, I.A. energy	10/05/2024	Project operation, Q/A and Q/C procedure, Compliance of monitoring plan with monitoring methodology and MR, Employment details, Role in the project activity, Trainings attended	Anjali Singh (Technical Expert)
2.	Pal	Yash	Barrage Incharge, I.A. energy			
3.	Kumar	Rajinder	Barrage Civil incharge			
4.	Singh	Lokendra	Electrician			
5.	Raj	Eam	Supervisor			
6.	Sharma	Satpal	Mechanical Engineer			
7.	Mohd.	Hanif	Junior Engineer, Transformer			
8.	Raj	Hem	Senior Electrician			
9.	Singh	Hari	Local villager		Local stakeholder grievances, Impact of	
10.	Lal	Chaman				
11.	Chand	Subhash				

					project on local area	

The details activity done during the Onsite audit is as below:

Onsite visit was conducted by the VVB for this GS verification on 10/05/2024 used standard auditing techniques to verify information and compliance with applicable requirements to the extent possible, to ensure the completeness and credibility of the audit. The Onsite audit was conducted and audit was attended by In-charge of the site as well as consultant. Details of attendees are given below in section D.3. The topics discussed during the Onsite audit are given in below table;

Duration of on-site inspection: 10/05/2024				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
1.	The verification team conducted visit to the project site to confirm the information and to resolve issues identified in the document review. An on-site assessment was conducted as a part of verification activity and involved: 1) An assessment of the implementation and operation of the CDM project activity as per the registered PDD 2) A review of information flows for generating, aggregating and reporting of the monitoring parameters 3) Interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the Monitoring Plan 4) A cross-check between information provided in the MR and data from other sources 5) A check of the monitoring equipment including calibration performance, and observations of monitoring practices against the requirements of the PDD and the applied methodology 6) A review of calculations and assumptions made in determining the GHG data and ERs, and	Chanju nallah, Chamba district, Himachal Pradesh, India	10/05/2024	Ms. Anjali Singh (Technical Expert)

	7) An identification of QA/QC procedures in place to prevent, or identify and correct, any errors or omissions in the reported monitoring parameters			

As referred above, the objective of the Onsite assessment was to verify the following issues:

- Confirm the implementation and operation of the project in line with GSPDD: the project activity is implemented as per the registered PDD and there is no change in capacity or design of the project activity since commissioning. Same was confirmed from commissioning certificates, recent site photographs, PPA, interviews with PP/Site in charge and invoices raised by PP towards state utility;
- Confirm the correct implementation of procedures for operations and data collection: during interviews with PP, it was confirmed that implementation of procedures for operations and data collection is in line with GS PDD. Service provider is responsible for the operations, maintenance as well as maintaining other technical data of the project activity. Performance and operation data of Hydro Power project;
- Cross-checked the information provided in the MR documentation with other sources: the information provided in the MR was crosschecked with the commissioning certificates, PPA, calibration certificates and JMRs;
- Checked the monitoring equipment against the requirements of the PDD and the approved methodology, including calibrations, maintenance, etc.: monitoring meters are cross checked with the previous verification reports, interviews with PP, current photographs/videos submitted by PP and calibration is checked with the calibration certificates issued by State Utility authorized third parties;
- Reviewed the calculations and assumptions used to obtain the GHG data and ER: calculation procedures and monthly generation data is checked with JMR and crosschecked with invoices;
- Identified if the quality control and quality assurance procedures are in place to prevent or correct errors or omissions in the reported parameters: during interviews with PP, it was confirmed that quality control and quality assurance procedures are in place. Metering arrangements & JMR procedure is defined and controlled by state utility and PP do not have control on it. Assessment team checked all the monthly JMR values as well as crosschecked with the invoices and found that emission reductions are calculated conservatively.
- Thus, to verify the implementation of project activity, onsite operation & maintenance, monitoring & management practices; assessment team has conducted onsite visit where interviews with onsite in-charge, O&M team and also had a detail discussion with the PP representative and reviewed third party statutory documents i.e. Commissioning certificates, Power Purchase Agreement, Complete set of JMRs covering monitoring period, Invoice (for cross check of Net electricity supplied to the grid as per revised PDD), training records, O&M schedule, complaint/feedback register and other relevant records.

After site interviews with concerned persons, document reviews & site videos/photographs submitted by PP; assessment team concluded that the project activity is implemented and operated in-line with the GS PDD. There is no change in the project design or operation and monitoring practices at site which can alter the applicability of meth or additionality of the project activity. In addition to the interviews with PP, assessment team have checked the commissioning certificate, PPA and JMRs and found that the project activity is implemented as per the GS PDD, and Monitoring report submitted by the PP for current monitoring period. From review of JMR and invoices assessment team therefore of the opinion that project is implemented as described in the GS PDD and there is no change in monitoring practices as well as all monitoring parameters

as envisaged in the PDD. All the monitored values are supported by the evidences i.e. JMRs and found that information provided in the MR is in line with the submitted evidences. Assessment team reviewed all the calibration certificates and found that monitoring meters are calibrated periodically. Detailed assessment provided later in Section E.7 of this report.

2.4 Quality of evidences

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

2.5 Reporting of findings

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

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

- Non-compliance with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- Modifications to the implementation, operation and monitoring of the 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 or previous verification(s) have not been resolved by the project participants.

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

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

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

Please refer Appendix 1 of this report. Total numbers of CARs: 04, CLs: 02, FARs: 01.

2.6 Internal Quality Control

As a final step of verification, the final documentation including the verification report has to undergo an internal quality control by the Technical Reviewer. Each report has to be finally approved either by the DOE's Technical Manager or the Deputy. This approval process also includes another quality assurance check in terms of Administrative Review. In case one of these two persons is part of the assessment team, the final approval can only be given by the person

who is not a part of the assessment team. If the documents have been satisfactorily approved, the Request for Issuance is submitted to the GS Registry along with the relevant documents.

3. VERIFICATION FINDINGS

3.1 FARs from Validation / Previous Verification

This is 1st periodic verification for the project activity and 01 FAR is raised during current verification of the project activity.

3.2 Project Implementation in accordance with the registered Project Design Document

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

The technical features of the equipment's have been verified by the assessment team by reviewing following documentation:

- Onsite interviews of O&M personnels
- Technical detail analysis of the Hydro Power plant from the documents submitted by the manufacturer.
- Power Purchase Agreement/Energy generation record for the project activity

Main Technical Parameters of the Implemented project is mentioned as follows:

Parameter	Value
Net head	236.67 m
Type of power house	Surface
Design discharge for individual units	5.62 m^3/sec
Type of switchgear	132 kV air insulated switchgear
Speed of turbine	750 rpm
Generation voltage	11 kV
Transmission voltage	132 kV
GSU transformer	25/20 MVA 3 phase, 11/132 kV

Assessment team checked the latitude and longitude of the project activity using GPS and also cross checked from the Google earth and found the detail to be correct. The same is defined below:

Longitude : 76°12'06" (76.2016) E to 76°14'52" (76.2477) E

Latitude : 32°44'14" (32.7372) N to 32°45'43" (32.7619) N

Power house Location: 32°45'40.0"N 76°12'05.0"E (32.761111, 76.201389)

Assessment team also checked the locations of the project activity in the GS PDD and found that the geographical coordinates (mentioned above) provided are found to be correct. Thus, locations provided in MR are found in line with revised documents of the project activity.

Assessment team checked the commissioning date of the project activity from the Commissioning certificate issued by the government authority i.e. state utilities and found the same to be appropriate.

The project activity was in normal operational during the monitoring period and the same has been confirmed during interviews with PP and crosschecked from review of JMRs. Power plant is working throughout the monitoring period and same have been conformed from JMR values. No unusual activates observed during the monitoring period and plant was undergone scheduled as well as emergency maintenance as per the recommendation of the manufacturers. No forced breakdown observed and the same is confirmed by the assessment team with the plant log details and JMRs and also confirmed during onsite audit.

Moreover, there were no changes in host country regulations which may impact either baseline or additionality of the project. Thus, assessment team confirms that the project is implemented as per the GS PDD and no change in additionality/baseline is envisaged for the present monitoring period.

The amount of CERs achieved (65,759 tCO_2e) during the present monitoring period is +32.55% higher than the estimated value (49,610 tCO_2e) for the monitoring period. The rationale behind the higher ER is monitoring period is less than one year and all estimated parameter (which is responsible for calculating estimated ER) are based on annual assumptions. Further, VVB team confirmed that increase in actual ER w.r.t to estimated ER doesn't adversely affected on project IRR further, to monitor to same in next verification, VVB team raised FAR for upcoming verification as well.

Compliance of the Monitoring Plan with the Monitoring Methodology:

The verification team is able to confirm that the monitoring plan is in accordance with the approved methodology ACM0002 Version 20, applied by the proposed GS project activity.

No deviation, correction or permanent change to the current monitoring plan has been requested or observed.

Materiality adopted in Verification:

Consideration of materiality in planning the verification

No.	Risk that would lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk levels	Justification	
1	Human errors: Readings from Meters (if not automatic)	LOW	Human error is likely to occur if the monitoring personnel are not trained well or inexperienced in data recording procedures and monitoring processes.	All the personnels are well trained to monitor and collect data and thus risk associated with Human error is minimized. Assessment team checked the training records to confirm that all the personal are well trained to handle the activities related to monitoring. Assessment team checked the training records for the complete

No.	Risk that would lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk levels	Justification	
				monitoring period and confirm that the personnel are well trained to monitor and collect data for the project activity.
2	Human error: Quantification of emission reduction	LOW	Use of spread sheets without adequate data control, changes/updates, version tracking, traceability and security	All the energy statement i.e. JMR sheets and the invoices for the complete monitoring period are checked and thus the assessment team confirms that the ER value is conservative and correct.

Consideration of materiality in conducting the verification
In line with Guidelines for Application of materiality in verifications Version 02.0, the verification team has conducted a complete verification of all the information presented in the monitoring report and data monitored as presented in the emission reduction calculation spread sheet. Its invoices follow the paper trail back to the raw data such as meter reading records and invoices. There are no material errors, overestimation of ER, omission or misstatement.

3.3 Compliance of the Monitoring Plan with the Monitoring Methodology

The verification team is able to confirm that the monitoring plan is in accordance with the approved methodology ACM0002 Version 20, applied by the proposed GS project activity.

3.4 Completeness of Monitoring

The monitoring has been carried out in accordance with the monitoring plan contained in the transitional document. All parameters were monitored and determined as per the monitoring plan of the GS PDD as follows:

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

$\mathbf{EF_{grid,OM,y}}$, $\mathbf{EF_{grid,BM,y}}$ and $\mathbf{EF_{grid,CM,y}}$ are considered as ex-ante fixed parameters. Assessment team checked the values, source of data, choice of data, purpose of the data mentioned in the MR from the GS PDD and confirms that the similar approach was considered for the current monitoring period also. The ex-ante fixed parameters are described below:

The value for $\mathbf{EF_{grid,OM,y}}$ **&** $\mathbf{EF_{grid,BM,y}}$ was considered from Grid calculation published by Central electricity Authority, India, version 16.0 on March 2021. Further, $\mathbf{EF_{grid,CM,y}}$ value calculated as per the below mentioned formula according to CDM Tool 07.

$\mathbf{EF_{grid,CM,y}} = EF_{grid,OM,y} * W_{OM} + EF_{grid,BM,y} * W_{BM}$

The default value as mentioned in the GS PDD and MR are same. The default value in turn is used for baseline calculation as per the formula given in the GS PDD for the current monitoring period.

The values are as below:

$EF_{grid,OM,y}$ = 0.9568 tCO_{2e}/MWh

$EF_{grid,BM,y}$ = 0.8682 tCO_{2e}/MWh

$EF_{grid,CM,y}$ = 0.9124 tCO_{2e}/MWh

b. Data and parameters monitored

As per the registered monitoring plan and requirement of the registered methodology following parameters needs to be monitored:

$EG_{facility,y}$ or $EG_{PJ,y}$ - Net Quantity of Electricity supplied to grid (MWh):

This parameter is computed as difference of EG_{gross} and EG_{aux} i.e $EG_{facility,y}$= EG_{gross}-EG_{aux}. The quantity of net electricity generation by the project activity is 72,072.76 MWh. Verification team has also cross checked the electricity export to grid with import/export meter installed at sub-station in line with the requirement of registered monitoring plan. Assessment team confirms that calculation is correct and in line with the approved monitoring plan.

EG_{gross}- Gross electricity generation by the project activity (MWh):

The gross generation data is measured/metered continuously by energy meter of accuracy class 1.0s installed at plant site owned by PP which is used for metering and billing to state utility. The electricity generation readings are recorded hourly in plant logbook as per monitoring plan in revised PDD. Energy meters are also installed at sub-station for measurement of export and import which is beyond control of PP and used for cross checked. The details of meters used for monitoring of gross generation are as follows:

Sr. No	Meter Location	Meter serial no.	Accuracy Class	Calibration Date	Calibration valid till	Meter replacement details
1	TG1(12MW)	34140731731	1.0	01/02/2017	31/01/2018	Meter Sr. no 34140731731 replaced with 34140731734 on 31/12/2017
		34140731734	1.0	28/12/2017	27/12/2018	Meter Sr. no 34140731734 replaced with 540180078685 on 27/12/2018
		540180078685	1.0	30/05/2018	29/05/2019	Meter Sr. no 540180078685 replaced with 34140731734 on 29/05/2019
		34140731734	1.0	17/05/2019	16/05/2020	
2	TG2(12MW)	34140731736	1.0	01/02/2017	31/01/2018	Meter Sr. no 34140731736 replaced with 34140731733 on 31/12/2017
		34140731733	1.0	28/12/2017	27/12/2018	Meter Sr. no 34140731733 replaced with

						540180079101 on 27/12/2018
		540180079101	1.0	31/05/2018	30/05/3019	Meter Sr. no 540180079101 replaced with 34140731733 on 29/05/2019
		34140731733	1.0	17/05/2019	16/05/2020	
3	TG3(12MW)	34140731735	1.0	01/02/2017	31/01/2018	Meter Sr. no 34140731735 replaced with 34140731738 on 02/01/2018
		34140731738	1.0	28/12/2017	27/12/2018	Meter Sr. no 34140731738 replaced with 540180078676 on 27/12/2018
		540180078676	1.0	30/05/3018	29/05/2019	Meter Sr. no 540180078676 replaced with 34140731738 on 29/05/2019
		34140731738	1.0	17/05/2019	16/05/2020	

During onsite visit it was observed that this value is monitored continuously and recorded hourly. The verification team has reviewed the plant logbook and confirms that values are correct. Verification team checked the plant logbook and confirms that values are correct. The meters are calibrated as per calibration frequency mentioned in registered monitoring plan. The total gross electricity generation by the project activity during this monitoring period is 72,236.56 MWh. The verification team has confirmed that monitoring practiced at the site matches with that reported in the revised PDD.

$EG_{y\ Aux}$ - Auxiliary consumption by the project activity (MWh):

The auxiliary consumption data is measured/metered continuously by auxiliary meter of accuracy class 0.5s installed at site. The auxiliary consumption data is recorded hourly in plant logbook. The details of auxiliary meter are as follows:

Sr. No	Meter Location	Meter serial no.	Accuracy Class	Calibration Date	Calibration valid till	Meter replacement details
1	AUX 1	34120540820	0.5	01/02/2017	31/01/2018	Meter Sr. no 34120540820 replaced with 540180087883 on 27/12/2018
		540180087883	0.5	06/07/2018	05/07/2019	Meter Sr. no 540180087883 replaced with 34153341596 on 29/05/2019
		34153341596	0.5	17/05/2019	16/05/2020	
2	AUX 2	34120540817	0.5	01/02/2017	31/01/2018	Meter Sr. no 34120540817 replaced with 540180087890 on 27/12/2018

		540180087890	0.5	06/07/2018	05/07/2019	Meter Sr. no 540180087890 replaced with 34153341597 on 29/05/2019
		34153341597	0.5	17/05/2019	16/05/2020	

The verification team has reviewed the plant logbook and confirms that values are correct. Verification team checked the plant logbook and confirms that values are correct. The total auxiliary consumption by the project activity is 163.80 MWh. The verification team has confirmed that monitoring practiced at the site matches with that reported in the revised PDD.

The calibration frequency of meter is annually. No Delay in above mentioned calibration period has been observed by VVB, thus accepted.

PP did not apply sampling plan to determine data and parameters monitored during this monitoring period. The verification team has checked all the documents such as JMRs and hence sampling plan was not required. The verification team hereby confirms that all the documents have checked and found relevant to the current project activity.

c. Compliance with the calibration frequency requirements for measuring instruments

The calibration details such as make, accuracy class serial number is as per the meter available onsite and checked though photograph of meters. The Calibration details are presented above section.

Calibration frequency of the monitoring meters for project site are mentioned accordingly as per the monitoring plan. Assessment team checked the same and found that the calibration is appropriate and correct as traceability is ensured. In accordance with submitted copies of calibration certificates during onsite visit, meters were calibrated and for the meters which are beyond the calibration period for those permissible error limit has been applied accordingly. Calibration of the Energy meter is done by 3rd party entity "*NIIRT-Centre for Calibration, Analysis & testing*". Entity is certified agency for calibration in host country i.e., India.

The details of meter numbers and testing dates, the meters are tested/calibrated during the monitoring period have been detailed in above section.

3.5 SDG Outcomes Monitoring

In the GS PDD Version 5 dated 17/09/2024, indicators are chosen for the monitoring of sustainable monitoring:

Meth/tool	Relevant SDG indicator	GS PDD	MR	Compliance
Net electricity supplied to the grid	SDG 7.2: By 2030, increase substantially the share of renewable energy in the global energy mix Indicator 7.2.1: Renewable energy share in the total final energy consumption	Net Quantity of Electricity supplied to grid	Net Quantity of Electricity supplied to grid	Yes

Meth/tool	Relevant SDG indicator	GS PDD	MR	Compliance
Decent Work and Economic Growth	8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value. 8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities	Number of employment generation	Number of employment generation	Yes
Decent Work and Economic Growth	8.6: By 2020, substantially reduce the proportion of youth not in employment, education or training 8.6.1 Proportion of youth (aged 15-24 years) not in education, employment or training	Quality of employment	Quality of employment	Yes
Climate Action	SDG 13.2: Take urgent action to combat climate change and its impacts (Indicator 13.2.1: Number of countries with nationally determined contributions, long-term strategies, national adaptation plans, strategies as reported in adaptation communications and national communications)	Emission reductions achieved per year	Emission reductions achieved per year	Yes

The verification of the parameters required by the monitoring plan is provided as follows:

Relevant SDG Indicator	**SDG 7.2: By 2030, increase substantially the share of renewable energy in the global energy mix** **Indicator 7.2.1: Renewable energy share in the total final energy consumption.**
Data/parameter:	**$EG_{facility,y}$ or $EG_{PJ,y}$**
Unit	MWh/year
Description	Net Quantity of Electricity supplied to grid
Source of data checked by the assessment team	Calculated from difference of Gross electricity generation and Auxiliary consumption by the project activity
Value(s) of monitored parameter	<table><tr><th>Monitoring Period</th><th>Net Electricity Generated (MWh)</th></tr><tr><td>24/02/2019- 30/06/2019</td><td>72,072.76</td></tr></table>

Means of verification:	The QA/QC procedure is as per the requirement of the GS PDD and onsite practice. Assessment team confirms the same during the onsite interviews with PP. Assessment team checked calculation for the net electricity generated by the project activity. Moreover, as per the requirement of the approved methodology and GS PDD, assessment team cross checked the net electricity value as presented in the respective JMR with the invoices raised and found the values match with each other. The same is thus acceptable to the assessment team and thus emission reduction calculation is correct.
Cross check mechanism	The JMR is cross-checked with the invoices. Emission reduction calculated is thus correct and accurate. The cross-check mechanism is presented in the emission reduction calculation sheet and the same is found correct.

Relevant SDG Indicator	**SDG 13 – Climate Action: Take urgent action to combat climate change and its impacts** **Indicator 13.2.2: Total greenhouse gas emissions per year.**
Data/parameter:	**ER_y**
Unit	tCO_2e
Description	Emission reductions achieved per year
Source of data checked by the assessment team	As per Actual ER Sheet.
Value(s) of monitored parameter	Year: From (24/02/2019 to 30/06/2019) — Emission Reductions (tCO_2e): 65,759
Means of verification:	Emission reduction calculated in thus correct and accurate.
Cross check mechanism	NA

Relevant SDG Indicator	**SDG 8: Indicator 8.5.1: Average hourly earnings of female and male employees, by occupation, age and persons with disabilities**
Data/parameter:	Number of jobs created during the project activity
Unit	Number
Description	Number of people employed directly due to the project activity
Source of data checked by the assessment team	Plant records or the training records for all the employees/Letter from O&M contractor for employment generation/ DOE interview with employees, local stakeholders etc.
Value(s) of monitored parameter	Year: 2019 (24/02/2019 to 30/06/2019) — Number: 105 Skilled: 74 Un-Skilled: 29 Semi-Skilled: 2
Means of verification:	The value for this parameter is taken from Plant records, Salary Slips. Attendance sheets. Verification team interviewed some employees & local stakeholders.
Cross check mechanism	Not applicable

Relevant SDG Indicator	**SDG 8: Indicator 8.6.1 Proportion of youth (aged 15-24 years) not in education, employment or training**
Data/parameter:	**Quality of employment**
Unit	**Number**

Description	Training of Staff
Source of data checked by the assessment team	Assessment team reviewed training records I, e., training attention sheet and MOMs
Value(s) of monitored parameter	Year: 2019 (24/02/2019 to 30/06/2019); Number of trainings provided: 01
Means of verification:	The value for this parameter is taken from Training records
Cross check mechanism	Not applicable

As a part of Continuous stakeholder communication or any grievance, during the interviews with PP, the verification team confirmed that there is a grievance book/form (Local body Authority person) and is accessible to local stakeholders. By checking grievance book submitted by PP, it was able to confirm there are no comments received from the local people for the present monitoring period. Local people are happy with the implementation of the project activity as it entrusts employment and improve living standard of local people and villagers.

Assessment team also checked that the projects are not registered under the I-REC mechanism, VCS, GCC etc and the same can be cross-checked at with respective Registry Website. Thus, double counting for the current monitoring period is ruled out.

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

Summary of ex-post values of each SDG outcome for the current monitoring period

Item	Baseline estimate	Project estimate	Net benefit
SDG 7: Affordable and Clean Energy	0	72,072.76 MWh	72,072.76 MWh
SDG 8: Decent Work and Economic Growth	0	105 people employed 01 Training	105 people employed 01 Training
SDG 13: Climate Action	65,759 tCO_2e	0	65,759 tCO_2e

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

Item	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period
SDG 7: Affordable and Clean Energy	54,373.08 MWh for current Monitoring period	72,072.76 MWh
SDG 8: Decent Work and Economic Growth	05 people employment and 1 training	105 (Skilled: 74, Un-Skilled: 29, Semi-Skilled: 2) employment At least 2,653,223.00 minimum wage
SDG 13: Climate Action	49,610 tCO_{2e} for current Monitoring period	65,759 tCO_2e

3.6 Assessment of Data and Calculation of Greenhouse Gas Emission Reductions

As a result of verification of the ER calculation process, the assessment team confirmed that all the parameters required for the determination of the emission reductions have been included in the Monitoring report and corresponding ER calculation spread-sheets and are consistent with the applied methodology ACM0002 Version 20 and the monitoring plan contained in the GS registered PDD. The parameters are complete in this monitoring period.

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

Baseline Emissions for the amount of electricity supplied by project activity, BE_y is calculated as:

The baseline emission is calculated in line with ACM0002, Version 20 using equation below:

$BE_y = EG_{PJ,y} \times EF_{grid,.y}$ **.....**Equation No. 6 **(**as per ACM0002)

Where,

BE_y = Baseline emissions in year y (tCO_2)
$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the project activity in year y (MWh)
$EF_{grid,,y}$ = Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (tCO_2/MWh)

$EF_{grid,\,y}$ = Baseline Emission factor
= 0.9124 tCO_2/MWh

BE_y = $EG_{BL,y} \times EF_{,grid,y}$
= 72,072.76 * 0.9124
= 65,759 tCO_2e (round down value)

Project emissions: The project emissions are regarded as zero according to the applied methodology and registered PDD. The reservoir area created by the diversion barrage is 17,000 m2 which gives a power density of 2117.6 W/ m2. Since this is greater than 10 W/ m2, Therefore, in accordance to applied methodology, the project emissions considered as zero.

Emission reductions:

Thus, the emission reductions are as per para 62 equation 17 of ACM0002 Version 20.0:

$ER_y = BE_y - PE_y$

= 65,759 – 0

= 65,759 tCO_2e

The actual achieved emission reduction for this monitoring period is +32.55% higher than estimated value in the GS PDD (65,759 tCO_2e against estimated 49,610 tCO_2e for 127 operational days).

3.7 Management and Operational System

The responsibilities of data measurement, collection, verifying, archiving etc. have been clearly defined in the GS PDD. The same practice is followed onsite and it is confirmed by the assessment team during the interviews with PP. The data related to ER calculation as well as data monitoring, collection process etc. have been internally reviewed by the management of the Monitoring team regularly. The responsibility of each function is consistent with the monitoring plan in the GS PDD.

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

It's verified during the interviews with PP & document review, the monitoring procedure as well as the internal quality management and control procedures are stipulated in the GS PDD. The monitoring personnel have been interviewed by the assessment team and it's confirmed that the monitoring is implemented as per the procedure. Also, the training record has been checked by the assessment team and it is confirmed that the monitoring personnel are get sufficient train to perform the monitoring.

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

4. REFERENCE

LIST OF DOCUMENTS	
S. No.	**Document/Evidence/Reference/Web link, Version, Date**
1.	Monitoring Report Version 01 dated 08/02/2024, Monitoring report version 05 dated 17/09/2024
2.	ER Sheets version 03 dated 17/06/2024
3.	Final PDD under validation Version 5 dated 14/02/2023, Final GS Validation report
4.	ACM0002 Version 20 "Grid-connected electricity generation from renewable sources" Tool 7- "Tool to calculate the emission factor for an electricity system" version 2.2.1 Tool 3- "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion" version 2.0 Tool 1- "Tool for the demonstration and assessment of additionality" version 5.2 CDM project standard for project activities, version 3.0 CDM validation and verification standard for project activities, version 3.0
5.	Guidelines for application of materiality in verification, version 2.0 Guidelines for sampling and surveys for CDM project activities and programmes of activities, version 4.0
6.	Commissioning certificates for the project activity

LIST OF DOCUMENTS	
S. No.	**Document/Evidence/Reference/Web link, Version, Date**
7.	Training records of the employees (both skilled/non-skilled) for the complete monitoring period
8.	Power Purchase Agreement
9.	Monthly Joint Metering report and Invoices.
10.	Calibration certificates for all meters covering complete monitoring period
11.	Logbook in excel for Daily Generation Reports for complete monitoring period
12.	Sample work contract for both skilled and non-skilled manpower Training Records
13.	Grievance register
14.	Technical specifications of monitoring equipment's
15.	Declaration from project developer for no double counting of the emission reductions

5. FINAL VERIFICATION STATEMENT

Applus+ Certification has been engaged by IA Hydro Energy Private Limited & EKI Energy Services Limited to perform the verification of the "Chanju I Hydro Electric Project" (UNFCCC Ref. No. 5773).

The management of EKI Energy Services Limited is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project's Monitoring Plan in the Registered PDD and the applied methodologies.

Our verification approach was based on the requirements as defined under the GS validation and Verification Standard, version 1.0. Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. The verification can confirm that:

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

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

Reporting period: 24/02/2019 to 30/06/2019 (inclusive of both dates)

Verified emissions in the above reporting period:

LGAI Technological Center, S.A.
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Leakage emissions	0 tCO_2e equivalents
Project emissions	0 tCO_2e equivalents
Baseline emissions	65,759 tCO_2e equivalents
Emission reductions	65,759 tCO_2e equivalents

Date:	28/08/2024
Lead Auditor	Mr. Ishan Shrivastava
Technical Expert:	Ms. Anjali Singh
Tech. Reviewer and Technical Expert:	Ms. Karen Elizabeth Vega Nonalaya

Approver *(Applus+ Certification VVB Technical Manager)*
Mr. Agustín Calle de Miguel

ASSESSMENT TEAM	
Lead Auditor: Mr. Ishan Shrivastava	**Technical Reviewer:** Ms. Karen Elizabeth Vega Nonalaya
Signature: 	Signature: 
Approver: Mr. Agustín Calle de Miguel	
Signature: 	

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

Table 1 Remaining FAR from validation and/or previous verifications

FAR ID	NA	**Section no.**	XX	**Date:** XX/XX/XXXX
Description of CL				
NA				
Project participant response				**Date:** XX/XX/XXXX
NA				
Documentation provided by project participant				
NA				
DOE assessment				**Date:** XX/XX/XXXX
NA				

Table 1. CL from this verification

Type:	☐ CAR ☒ CL/CR ☐ FAR	Number:	01
Raised by:	Mr. Ishan Shrivastava	Ref. to checklist in above tables:	-
Description of the audit finding		Date:	20/05/2024
1. Under section B.1, of the monitoring report peak period is found missing of the hydroelectric plant. 2. During site visit it has been observed information of billing meters provided is not included in the Appendix 2 of Calibration details of monitoring report. Kindly Clarify			
Project Participant's response		Date:	17/06/2024
1. Under section B.1, of the monitoring report peak period is being mentioned in revised MR of the hydroelectric plant. 2. All required information of billing meter which are under Project owner control being included in the Appendix 2 of Calibration details of monitoring report.			
Documentation provided as evidence by Project Participant			
Revised Monitoring report			
Auditor's assessment comment		Date:	18/06/2024
1. PP has now revised the MR and include peak period under section B.1 found during thorough assessment. Hence, this part of CL is closed. 2. During review, it has been found details of billing meter still found missing in the monitoring report, kindly clarify. Thus, CL 01 is open			
Project Participant's response		Date:	26/06/2024
1. Appendix 2 is being revised and billing meters details are being mentioned.			
Documentation provided as evidence by Project Participant			
Revised Monitoring report			
Auditor's assessment comment		Date:	31/07/2024
PP has submitted revised monitoring report and now included the billing meter details. Found acceptable to assessment team. Thus, **CL is closed.**			

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Type:	☐ CAR ☒ CL/CR ☐ FAR	Number:	02
Raised by:	Mr. Ishan Shrivastava	Ref. to checklist in above tables:	-
Description of the audit finding		Date:	20/05/2024
In monitoring report of section E.5 Formula used for calculation of affordable and clean energy for SDG 7 is found inconsistent, thus PP shall clarify.			
Project Participant's response		Date:	17/06/2024
Typo error is being corrected in revised monitoring period regarding the used for calculation of affordable and clean energy for SDG 7 in section E.5.			
Documentation provided as evidence by Project Participant			
Revised Monitoring Report			
Auditor's assessment comment		Date:	18/06/2024
PP has now revised the section E.5 of the monitoring report and corrected the calculation used for affordable and clean energy for SDG 7 found during assessment. Hence, **CL is closed.**			

Table 2. CAR from this verification

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	01
Raised by:	Mr. Ishan Shrivastava	Ref. to checklist in above tables:	-
Description of the audit finding		Date:	20/05/2024
Following discrepancies observed during the review of monitoring report: 1. In Section A.1 of the monitoring report, it is found that the project expected energy generation for per year and the net electricity available for sale to the grid is not in line with the provided ER sheet. 2. The geographical co-ordinates of the power plant site provided in the section A.2 of the monitoring report is incorrect. However, PP needs to provide the proper geographical coordinates for the power plant site. 3. Under section B.1, PP needs to clarify that the length given for the pressure flow head race tunnel is correct, as it found inconsistent with the provided supporting documents. 4. In Section B.1 the capacity of synchronous generator for continuous output is not in line with the onsite observation. 5. PP needs to provide the supporting documents to justify the number of trainings given during construction and operation of project. Thus, Corrective action sought			
Project Participant's response		Date:	17/06/2024

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Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	01
Raised by:	Mr. Ishan Shrivastava	Ref. to checklist in above tables:	-

1. The typo has been corrected. The project's expected annual energy generation and the net electricity available for sale to the grid have been updated in accordance with the provided ER sheet.
2. The geographical co-ordinates of the power plant site provided in the section A.2 of the monitoring report is being revised and proper geographical coordinates for the power plant site mentioned in revised monitoring report.
3. Under section B.1, Typo error is being corrected and correct information mentioned revised Monitoring report.
4. In Section B.1, concerning the capacity of the synchronous generator for continuous output, the typo has been corrected, and the revised monitoring report now contains the accurate information.
5. Supporting documents for number of trainings given during construction and operation of project being submitted to verification team, same information being provided in revised monitoring report.

Documentation provided as evidence by Project Participant

Revised Monitoring report.

Revised Emission reduction sheet.

Training records.

Auditor's assessment comment	Date:	18/06/2024

1. During assessment it was observed that the PP has omitted an entire sentence from the revised monitoring report, resulting in a discrepancy with the standard template filling instruction. PP to provide an explanation for this alteration. Hence, this part of CAR is open.
2. PP has now revised the geo-coordinates and provided the proper co-ordinates of power plant site under section A.2 of monitoring report. Hence, this part of **CAR is closed.**
3. During assessment it was found that length of the water conductor system is now updated in revised monitoring report. Hence, this part of **CAR is closed.**
4. VVB upon verification found that the capacity of synchronous generation for continuous output under section B.1 is still not updated in provided MR. PP needs to revise it. Hence, this part of CAR is open.
5. During assessment found that PP has provided Attendance sheet, Salary slips and Salary Site but still not provided training records. Hence, this part of CAR is open.

Project Participant's response	Date:	26/06/2024

1. Monitoring report has been revised accordingly

4. Section B.1 of Monitoring report has been revised accordingly.

5. Training Record for Current monitoring period are being provided to verification team.

Documentation provided as evidence by Project Participant

Revised monitoring & Training Record

Auditor's assessment comment	Date:	31/07/2024

1. PP has revised throughout the monitoring report and same has been now inline with the instruction to complete GS monitoring report template. Thus accepted. **CAR is closed.**
4. Capacity of synchronous generation for continuous output under section B.1 is now updated in revised MR. Thus, found acceptable to VVB team. Thus accepted. **CAR is closed**
5. PD has now provided the training records for the current monitoring period. Thus, found acceptable to assessment team. **CAR is closed**

	☒ CAR ☐ CL/CR ☐ FAR	Number:	02
Raised by:	Mr. Ishan Shrivastava	Ref. to checklist in above tables:	-
Description of the audit finding		Date:	20/05/2024
Section B.1 "Description of implemented project" of Monitoring report found not in-line with the guidelines to complete GS4GG monitoring report. Information on the implementation and actual operation in section B.1 of the PDD of the project activity, including relevant dates (e.g. construction, commissioning, and start of operation) are missing. Supporting related to the same is also not submitted to the assessment team. Corrective action sought.			
Project Participant's response		Date:	17/06/2024
In Section B.1, information on the implementation and relevant dates has now been added. The section is now in line with the GS4GG monitoring report filling guidelines. Supporting documents are being submitted to verify the same.			
Documentation provided as evidence by Project Participant			
Revised Monitoring report Commissioning Certificate			
Auditor's assessment comment		Date:	17/06/2024
PP has not revised the section B.1 of MR and it in line with the GS4GG monitoring report filling guidelines found during thorough assessment. Furthermore, PP has still not provided commission certification for supporting the date of commission updated in revised MR. Hence, CAR is open.			
Project Participant's response		Date:	26/06/2024
In Section B.1, information on the implementation and relevant dates has now been added in revised Monitoring period. The section is now in line with the GS4GG monitoring report filling guidelines. Also commissioning certificate are now being submitted to verification team.			
Project Participant's response		Date:	26/06/2024
Section B.1 of MR has been revised			
Documentation provided as evidence by Project Participant			
Revised monitoring report			
Auditor's assessment comment		Date:	31/07/2024
PP has revised the section B.1 of MR it in line with the GS4GG monitoring report filling guidelines found during thorough assessment. Furthermore, PP has provided commission certification for supporting the date of commission updated in revised MR. Hence, **CAR is closed.**			

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	03
Raised by:	Mr. Ishan Shrivastava	Ref. to checklist in above tables:	-
Description of the audit finding		Date:	20/05/2024
In Appendix 3 "Major Breakdown Details" the date of shut down and the reason of shut down is not in line with the submitted supporting document. Thus, PP need to recheck and revise it.			
Project Participant's response		Date:	17/06/2024
Typo error is now being corrected and Appendix 3 and the date of shut down and the reason of shut down is in-line with supporting documents.			
Documentation provided as evidence by Project Participant			
Revised Monitoring report			
Auditor's assessment comment		Date:	17/06/2024
During assessment it was found that reason of shut down in Appendix 3 table "Major Breakdown Details" is removed by PP, kindly clarify regarding this removal. Hence, CAR is open.			
Project Participant's response		Date:	26/06/2024

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	03
Raised by:	Mr. Ishan Shrivastava	Ref. to checklist in above tables:	-
Reason of Plan shut down are now being added in the Appendix 3.			
Documentation provided as evidence by Project Participant			
Revised Monitoring report Major breakdown details			
Auditor's assessment comment		Date:	17/07/2024
Shut down detail included in Appendix 3 table as "Major Breakdown Details". Hence, **CAR is closed.**			

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	04
Raised by:	Mr. Ishan Shrivastava	Ref. to checklist in above tables:	-
Description of the audit finding		Date:	20/05/2024
In section E.6 of monitoring report information mentioned for ER comparison b/w achieved and estimate found inconsistent with the ER sheet further PP requested to access higher achieved emission reduction in accordance with the GS rule "RC-2022-assessment-approach-for-reporting-higher-ex-post-emission-reductions". Thus, CAR 04 is raised.			
Project Participant's response		Date:	17/06/2024
In Section E.6 of the monitoring report, it has been observed that there is a 32.55% increase in emission reductions achieved during the current monitoring period. This improvement is attributed to the plant operating at full capacity, effective technology implementation, regular maintenance, and favorable seasonal weather conditions, despite the verification period lasting only 127 days. PD has reviewed and corrected the data comparing achieved and estimated emission reductions to align with the ER sheet. Furthermore, PD has responded to the request for accessing higher achieved emission reductions in compliance with GS rule "RC-2022-assessment-approach-for-reporting-higher-ex-post-emission-reductions." According to section 2.1.3.b of the guidelines, the verifying VVB may issue a Forward Action Request (FAR) for further investigation. PD requests the initiation of a FAR, as the higher emission reductions achieved have been recalculated based on a verification period spanning from 26/07/2017 to 30/06/2019. The site visit took place on 25/02/2021, and the retroactive claim period covers the two years preceding the site visit (24/02/2019 to 30/06/2019).			
Documentation provided as evidence by Project Participant			
Revised Monitoring Report Revised Emission Reduction Sheet			
Auditor's assessment comment		Date:	18/06/2024
During review it has been found PLF value is above the range of variation (i.e., +/- 10%) applied for sensitivity analysis, in accordance with GS rule "RC-2022-assessment-approach-for-reporting-higher-ex-post-emission-reductions" as per para 2.1.3.b verifying VVB shall raise a Forward Action Request (FAR) at the time of first reported instance for further investigation, as applicable. The FAR remains valid throughout the crediting period to keep track of the issue throughout the crediting period. Thus FAR is raised as it is first crediting period. Hence **CAR is closed.**			

Table 3. FAR from this verification

Type:	☐ CAR ☐ CL/CR ☒ FAR	Number:	01
Raised by:	Mr. Ishan Shrivastava	Ref. to checklist in above tables:	-
Description of the audit finding		Date:	31/07/2024

Type:	☐ CAR ☐ CL/CR ☒ FAR	Number:	01
Raised by:	Mr. Ishan Shrivastava	Ref. to checklist in above tables:	-
The VVB shall verify the emission reductions will be capped to the upper bound of the sensitivity analysis (+/- 10%) range for next monitoring period if achieved emission reductions values higher.			
Project Participant's response		Date:	XX/XX/XXXX
-			
Documentation provided as evidence by Project Participant			
-			
Auditor's assessment comment		Date:	XX/XX/XXXX
-			

Appendix 2: Audit Team CVs

Name	SHORT CV. BACKGROUND INFORMATION
Mr. Ishan Shrivastava	Mr. Ishan Shrivastava a Bachelor of Engineering in Mechanical Engineering graduate from Rajiv Gandhi Proudyogiki Vishwavidyalaya, India, brings a year of professional expertise garnered from his tenure at GAIL (India) Limited, one of India's prestigious Maharatna Companies, where he focused on Natural Gas, Energy, and Environmental matters. Currently, he actively associated with True Quality Certifications Pvt. Ltd., (Applus+ Certification's Outsourced Entity) having served as a pivotal team member since 2019. In this capacity, Ishan plays a significant role in supporting Audit teams as Lead Auditor & Technical Expert (TA 1.2 and 3.1) tasked with validating/verifying Project Activities, encompassing both Renewable and non-Renewable projects, within the framework of CDM/VCS/GS4GG/Bio-Carbon/GCC/ICR programs. His steadfast dedication to this pivotal responsibility underscores his expertise and unwavering commitment to the field Mr. Ishan Shrivastava is based in Indore city, India. Mr. Ishan Shrivastava participates as Lead Auditor and Country Expert for this project activity
Ms. Anjali Singh	Ms. Anjali Singh holds a Bachelor of Engineering degree in Electronic and Communication Engineering from Rajiv Gandhi Proudyogiki Vishwavidyalaya, India. She has one year of experience as a Graduate Engineer Trainee at Idea Cellular Limited, India. She has also worked for three years as an Assistant Engineer at Gargee Energies, India, where she was involved in solar rooftop project design and consulting, as well as operation and maintenance activities. Ms. Anjali is also certified with ISO 14001 and 9001. Currently, Anjali is working at True Quality Certifications Pvt. Ltd. She has been working there since 2021 and the company is an outsource entity for LGAI Technological Center, S.A. (Spain) "Applus+ Certification". At True Quality Certifications, Anjali supports audit teams for verifications of project activities for renewable and non-renewable projects under the

	Clean Development Mechanism (CDM), Verified Carbon Standard (VCS), Gold Standard for Global Goals (GS4GG) programs and Global Carbon Council (GCC). Ms. Anjali Singh is based in Indore, India. Ms. Anjali Singh participates as part of the Audit Team as Technical Expert and country expert for assessment in Sectorial Scope 1.2 (Energy Industries (Renewable / Non-Renewable Sources).
Ms. Karen Elizabeth Vega Nonalaya	Ms. Karen Elizabeth Vega Nonalaya has a Bachelor's Degree in Environmental Sciences from the University of Barcelona, she has post-graduate studies in renewable energies, and a master's degree in finances. Karen has more than 7 years of experience in the sector of quality, environment, and climate change. Her professional career has been mainly focused, but not limited to, on the sector of validation and verification of GHG emission compensation and mitigation projects, in different countries and under universally recognized standards (CDM-UNFCCC, VS, GS). She has also worked as Sustainability and Environment consultant mainly for the metal coating sector, conducting transversal roles and opening successfully the sustainability department in the company. Currently, she works in the CDM Department of Applus + Certification, as CDM Project Manager, being especially involved in technical and management tasks in the DOE to ensure the quality of the performance of different assessments, coordinate the global team, and maintenance of the Accreditations. Karen has attended different CDM, VCS, GS4GG, GCC, ISO 9001, and ISO 14001 training processes. She has conducted consultancy services for ISO 9001 and ISO 14001 implantation in various companies, being in charge from its beginnings until final certification and certificate obtain; in the same way she has conducted Carbon Footprint Analysis and Reports. Karen is already qualified as an auditor for ISO 9001, ISO 14001, GHG audits, Carbon footprint Audits and CDM renewable projects audits (Sectoral Scopes 1.1 and 1.2). Ms. Karen Vega participates in the project's technical review team