LGAI Technological Center, S.A.
Campus UAB – Ronda de la Font del Carme, s/n
08193 Bellaterra – Barcelona
(Spain)
Tel.:+34 93 567 20 08
Fax.:+34 93 567 20 01
www.appluscertification.com

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

Project Title:	2x50 MW Orange Suvaan Solar Photovoltaic Power Project in Maharashtra, India
Monitoring Period:	01/02/2020 to 31/03/2021 (Inclusive of both days)
GS project ID:	GS5928
Internal ID:	12921
Customer:	Orange Suvaan Energy Private Limited
Date:	21/10/2021
Revision:	02

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SUMMARY			
Reference No.	**Date** *(first version)*	**Version No.**	**Date** *(last version)*
A+SH_SYST_TQC 12921	26/08/2021	02	21/10/2021
GS4GG Verification			
GS4GG Certified Product *(sought)*:	GHG Emission Reductions		
GS4GG SDG Impact Statement *(sought)*:	Impact Certification		
General Information			
Client	Orange Suvaan Energy Private Limited		
Project Title	2x50 MW Orange Suvaan Solar Photovoltaic Power Project in Maharashtra, India		
Project Participants	Orange Suvaan Energy Private Limited		
Project Location	The project is located at Mhasale village of Dhule District in the state of Maharashtra, India		
Contact Person	Mr. Pushpinder Hira		
Monitoring Period	01/02/2020 to 31/03/2021 (Inclusive of both days)		
GS4GG Version: GS4GG Principles and Requirements 1.2 GS4GG Activity Requirements: RE Activity Requirements Applied Methodology Version: ACM0002: Grid-connected electricity generation from renewable sources, Version 17.0	GS4GG Sectoral Scope: 2 UNFCCC CDM Sectoral Scope: 1 Technical Area: 1.2		
Published Monitoring Report Version: 01 Date: 26/05/2021	Final Monitoring Report Version: 02.1 Date: 20/10/2021		
Certified Project Design Document Version: 05 Date: 25/10/2018 GS Passport Version (if applicable): 05 Date: 25/08/2018			
Estimated SDG Goals: SDG 7 (Affordable and clean energy): 196,350 MWh/annum SDG 8 (Decent work and economic growth): Trainings Provided to O&M Staff – 03 nos. Cost Spent on O&M – 400 Lakh INR, No of Jobs generated - 25 nos. SDG 13 (Climate action): 191,971 tCO_2e/annum			
Actual SDG Goals achieved during current monitoring period: SDG 7 (Affordable and clean energy): 234,462 MWh SDG 8 (Decent work and economic growth): Trainings Provided to O&M Staff – 28 nos, Cost Spent on O&M – 1581 Lakh INR, No of Jobs generated - 93 nos SDG 13 (Climate action): 229,232 tCO_2e			
Selected Sustainable Development Goals (SDGs): 7, 8 and 13			
Verification Summary			
LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by Orange Suvaan Energy Private Limited to perform the 3rd periodical verification of "2x50 MW Orange Suvaan Solar Photovoltaic Power Project in Maharashtra, India" (Ref. No. GS5928) applying the methodology ACM0002, Version 17.0. The management of Orange Suvaan Energy Private Limited is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions.			

A desk review and a remote audit have been conducted to verify the data submitted in the monitoring report. Applus+ Certification confirms the following have been reviewed:

a. The GS4GG PDD V05 including the monitoring plan;
b. Monitoring report(s);
c. The applied monitoring methodology;
d. Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board;
e. The Gold Standard for Global Goals "Principles and Requirements" Version 1.2 and GS4GG guideline and related Annex.
f. All information and references relevant to the project activity's resulting in emission reductions.

Orange Suvaan Energy Private Limited has implemented a Greenfield **"2x50 MW Orange Suvaan Solar Photovoltaic Power Project in Maharashtra, India"** large-scale grid connected solar power project ("Project activity") in Mhasale village of Dhule District in the state of Maharashtra, India. Project activity comprises of state-of-the-art, environment friendly, solar PV based power project. Project activity comes under the purview of large-scale, solar PV based power project implemented in India.

Electricity generated from the project activity is sent to Indian grid of India. As per GS PDD V05 and GS4GG Transition Annex., the gross electricity generation from the project activity is estimated as 168,630 MWh/year and abates 164,869 tonnes of Carbon Dioxide emissions per year during its entire crediting period (16/06/2017- 16/06/2024)

Applus+ Certification confirms that the project is implemented in accordance with the validated PDD V05. The monitoring plan complies with the applied methodology ACM0002, Version 17.0 and the Gold Standard for Global Goals "Principles and Requirements" V 1.2, GS4GG guideline the monitoring has been carried out in accordance with the monitoring plan. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the projects GHG emissions and the resulting GHG emission reductions reported and related to the valid 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 229,232 tCO_2e emission reductions during period 01/02/2020 to 31/03/2021 (Both days included).

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

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

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ABBREVIATIONS	
ACM	Approved Consolidated Methodology
AM	Approved Methodology
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
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 Orange Suvaan Energy Private Limited to perform the 3rd periodical verification of "2x50 MW Orange Suvaan Solar Photovoltaic Power Project in Maharashtra, India" applying the methodology ACM0002, Version 17.0 and GS4GG guideline. Gold Standard projects must undergo periodic audits and verification of emission reductions as the basis for issuance of Gold Standard VERs. The objective of the verification work is to assess the compliance with the requirements of 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 registered PDD and transitional documents for registration and that all physical features (technology, project equipment, monitoring and metering equipment) of the project are in place;
- Ensure that the published MR and other supporting documents provided are complete, verifiable and in accordance with applicable CDM VVS for project activities version 02 for the project activity and Gold Standard i.e. and 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 17.0.

1.2 Scope

The verification scope encompasses an independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the VVB. The verification is based on the submitted monitoring report, the registered PDD V05 as well as its validation report, the applied monitoring methodology, relevant decisions, clarifications and guidance from the CMP and the EB, GS4GG guideline and any other information and references relevant to the project activity's resulting emission reductions. These documents are reviewed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures, GS4GG guideline and relevant Principles and Requirements, as well as their related rules and guidance.

Based on the requirements in the CDM VVS for project activities version 02 for the project activity as well as the GS4GG guideline, Applus+ Certification has applied a rule-based approach for the verification of the project. The principles of accuracy, completeness, relevance, reliability and credibility were combined with a conservative approach to establish a traceable and transparent verification opinion.

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

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

1.3 Description of the project activity

Orange Suvaan Energy Pvt. Limited has implemented a Greenfield "2x50 MW Orange Suvaan Solar Photovoltaic Power Project in Maharashtra, India" (Project activity) in Dhule district, Maharashtra, India. Project activity comprises of state-of-the-art, environment friendly, solar PV technology. Project activity comes under the purview of large-scale, solar power technology based project implemented in India. Electricity generated from the project activity is sent to Indian grid. As per validated PDD V05, the gross electricity generation from the project activity is estimated as 168,630 MWh/year resulting in estimated emission reductions of 164,869 tCO2e/ year during the first crediting period of the project activity (16/06/2017- 16/06/2024). The project has obtained requisite clearances and has already commissioned and was confirmed during site visit.

Project activity is a grid-connected large-scale 2x50 MW solar photo voltaic power generation facility.

Technical Description:

The total installed capacity of the project is 2x50 MW located in Mhasale village of Dhule district in Maharashtra, India. Technical specifications of 2x50 MW Solar PV Project by Orange Suvaan Energy Pvt. Ltd verified during site visit are as follows:

Solar PV modules (Make)	**JA Solar**	**JA Solar**
Technology	60-cell multi Crystalline	60-cell multi
Model	JAP 6(K) 60 265 4BB	JAP 6(K) 60 270 4BB
Capacity	265 Wp	270 Wp
No. of Modules	208320	306720
Capacity, MW (DC)	55.20MWp	82.81MWp
Total Capacity, MW (DC)	138.00 MWp	
Total Capacity, MW (AC)	100 MW	

Inverters (Make)	**ABB**
Model	PVS800-57
Rated Capacity	1000 KW
No. of Inverters	100
Rated Input Voltage	1000 V DC

Transformers (Make)	**Prolec GE**	**Sudhir Power**	**Sudhir**
Model No.	ONAF	ONAN	ONAN
Capacity	50/60 MVA	4 MVA	2 MVA
No. of Transformers	02	24	02
Voltage Ratio	11/132 KV	4 x 380 V/ 11 kV	2x 380 V/

2. METHODOLOGY

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

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

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

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

2.1 Appointment of the assessment team

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

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

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

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

The assessment team competence shall minimum consistent expertise of Lead Auditor (LA), Technical Expert (TE) and Technical Reviewer (TR). The sectoral scope/technical area knowledge linked to the applied methodology/ies shall be covered by the assessment team.

Name	Role	SS Coverage	TA Coverage	Financial aspect	Host country experience

Mr. Pankaj Kumar	LA/TE	YES	YES	NA	YES
Mr. Simon Shen	TR	YES	YES	NA	NA

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

2.2 Document review

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

- Verify the completeness of the data and the information presented in the MR;
- Check the compliance of the MR with respect to the monitoring plan depicted in the registered PDD and 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 section 4 of this report for detail of the documents checked.

2.3 On site assessment and follow up interviews

As a result of the COVID-19 pandemic, taking into account the rules of relevant national and local authorities (local to the VVB offices as well as to locality of the site visits), World Health Organization (WHO) recommendations, policies of the VVB and other relevant travel restrictions and guidance (for example, a requirement to self-isolate upon return from specific countries), the VVB has skipped the on site visit. As COVID -19 situation is going to stay for a while, and it seems that restoration of normal situation will take time and PP has requested to proceed with project verification as delay could have some financial implication on PP. Hence the site visit could not be postponed for this project activity.

However as per the COVID 19 Interim Measures by GS4GG, the VVB may use alternative measures for auditing like remote audits. As per para 4.1.1 (b) of COVID 19 Interim Measures, Verification team has used the following alternative means for its assessment and to justify that they are sufficient for the purpose of verification of the PA. Along with desk review, audit team has conducted remote audit interview corresponding to the PA as follows:

A complete desk review of the MR and supportive evidences have been checked by the verification team.

- Verification team has performed Skype interview with PP in order to check implementation, current situation, evaluation of data management, QA/QC system, project technology,

training provided, monitoring, calibration etc. Interview questions were filled as per Verification team interview checklist. Cross checks between information provided by interviewed personnel (i.e. by checking sources) to ensure that no relevant information has been omitted.

- Verification team has performed interview with randomly selected Local stakeholders to check the monitoring of GS sustainable parameters like employment and training, environmental and other relevant issues.

- Cross-check evaluation, for information received from interviews, under the scope of all information and references provided in the MR and supporting documents.

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

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	R	Mr. Kishore	PP representative	30/07/2021	Project implementation, Baseline emissions, ER calculations, Sustainable monitoring etc.	Mr. Pankaj Kumar
2	Hira	Mr. Pushpinder	PP representative	30/07/2021	Project implementation, Baseline emissions, ER calculations, Sustainable monitoring etc.	
3	--	Mr. Narendra	Consultant, Kosher Climate	30/07/2021	Project implementation, Baseline emissions, ER calculations, Sustainable monitoring etc.	
4	Gotmare	Mr. Birendra	Local stakeholders	30/07/2021	Stakeholder meeting- Noise pollution if any, employment opportunities	

					.	
5	Sakpal	Mr. Sunil	Local stakeholders	30/07/2021	Stakeholder meeting- Noise pollution if any, Standard of Livings etc.	

The objective of the remote audit is to:

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

Name of the stakeholder	Mr. Birendra Gotmare
Occupation	Villager
VVB QUESTION: Is there any noise pollution due to the operation of wind turbine? Answer: No, the wind turbines are located very far from the residences. So, there is no noise pollution at the households due to operation of the wind turbine. VVB QUESTION: Did PP provide employment to local people? Answer: Yes, employment is generated and the locals are given priority. Assessment team noted that locals were employed for the project activity for the current monitoring period. VVB also like to conclude that during the remote audit it was observed that local people were employed for security and operation related work like vegetation improvement and other unskilled work. VVB also found that skilled local persons were also employed by the organization for the operation and maintenance of the power plant.	

Name of the stakeholder	Mr. Sunil Sakpal
Occupation	Villager
VVB QUESTION: Is there any noise pollution due to the operation of wind turbine?	

Answer: No, there is no noise pollution at the households due to operation of the wind turbine. VVB QUESTION: Is there is negative impact on standard of living due to the project? Answer: No impact on standard of living. In fact, the standard of living is improved for the people who got employment in the wind farm.

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 02. 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 (CR) if information is insufficient or not clear enough to determine whether the applicable CDM/GS requirements have been met.

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

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

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

2.6 Internal Quality Control

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

3. VERIFICATION FINDINGS

3.1 FARs from Validation / Previous Verification

This is 3rd periodic verification for the project activity and no FAR is raised during validation or previous 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 registered PDD. The assessment team confirms, through the visual inspection that all physical features of the proposed project activity including data collecting systems and storage have been implemented in accordance with the validated PDD.

The project activity was in normal operational during the monitoring period and the same has been confirmed during the on-site interviews. No unusual activates observed during the monitoring period and plant was undergone scheduled maintenance as per the recommendation of the manufactures. No forced breakdown observed and the same is confirmed by the assessment team with the plant log details.

Project Participants	Orange Anantapur Wind Power Pvt Ltd
Title of project activity	2x50 MW Orange Suvaan Solar Photovoltaic Power Project in Maharashtra, India
GS Registration No.	GS 5928
GS Version applied	The project has been submitted to GS4GG as per the guidelines of Gold Standard for Global Goals "Principles & Requirements" Version 1.2. Hence the current verification of the project activity has followed the GS4GG version of the Gold Standard.
Baseline and monitoring methodology	ACM0002 Version 17.0 - Grid connected renewable electricity generation

Project type	The purpose of the project activity is to generate electricity using wind power technology. It is a 100 MW large-scale grid connected wind energy power project.
Project scale	Large
Location of the project activity	Mhasale village of Dhule District in the state of Maharashtra, India
Project's crediting period	16/06/2017 to 16/06/2024 (1st Crediting Period)
Total duration of the project	7 years (Renewable crediting period)
Period verified in this verification	01/02/2020 to 31/03/2021 (Inclusive of both days)

Based on interview with PP representative the verification team was able to confirm that the project implementation is in accordance with the project description contained in the registered GS PDD (version 05, dated 25/10/2018)/10/

Based on interview with PP representative the verification team was able to confirm that the project implementation is in accordance with the project description contained in the GS PDD (version 5.0, dated 25/10/2018) The project activity is a 2x50 MW large-scale grid connected solar PV power project in Dhule district, Maharashtra, India state of India with latitude (21^0 06'28.8"N) and Longitude (74^0 26'27.6E) as their geo coordinates. The same was confirmed referring to the website Google maps and found to be correct. The project activity (part of the project site) involves generation of electrical energy derived from Solar energy. The baseline scenario identified is import of electricity from grid. Project activity comprises of state-of-the-art, environment friendly, solar power generation using photo voltaic technology. Project activity comes under the purview of large-scale, solar PV power technology-based project implemented in India. The project has obtained the requisite clearances and has already commissioned on as verified from the review of relevant document and operating successfully. Project equipment and the technology are employed as mentioned in the registered PDD. The technical details of the project activity as confirmed during site visit explained in sec. 1.3 above. The operation of the project activity complies with all statutory requirements as the PP is submitting the monthly invoice to state utility (MSEDCL – Maharashtra State Electricity Distribution Company Limited) The monitoring data is recorded on continuous basis and available on hourly/daily basis as ERP and MIS reports and stored at plant site. Training has been provided to the operators handling the operation of the critical equipment such as solar panels, power evacuation systems and other equipments. The company has recruited personnel with relevant experience in the operation of the plant. There is no event or situation including emergency situations occurred during this monitoring period which has impacted the applicability of methodology. The outage record or breakdown report for this monitoring period was verified during the on-site visit from logbooks and found OK.

The timeline of the project's implementation is as follows:

Milestone of the project activity	**Timeline**	**Assessment by the verification team**
Registration of the	01/08/2018	Date of registration confirmed with GS4GG Transition document and found to be correct.

project activity under GS4GG Principles and Requirements version 1.2		https://registry.goldstandard.org/projects/details/1037
Crediting period		
3rd Monitoring period	01/02/2020 to 31/03/2021	Verification team has verified same from the registered documents. Also, this monitoring period is within the first crediting period.

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

Estimated Emission Reduction as per registered PDD	191,971 tCO_2e As per PDD V05, ER for 365 days - 164,869 tCO_2e and for this MP, total days are 425. Accordingly, emission reduction for this MP, estimated ER is 191,971 tCO_2e. Please refer calculation in ER Spread sheet
Actual Emission Reduction for the monitoring period	229,232 tCO_2e
Is any increase of VERs occurred?	Yes
Reason for increase of VERs	During this monitoring period, higher PLF achieved which is not in control of PP and it depends on variability in climatic factors. The emission reduction achieved during the monitoring period is 19.40% higher than the estimated emission reductions. The generation of electricity depends upon the climatic conditions which varies a lot and affects PLF, and not within the control of the project participant. The actual PLF achieved is higher than the estimated PLF for to complete years. The higher PLF achieved during initial years are due to the following reasons: i. High efficiency of plant equipments ii. Higher plant availability iii. Higher grid availability iv. More frequent module cleaning This variation is majorly due to the variations in climatic conditions, grid availability and other parameters which are not in the control of PP. However, higher efficiency and plant availability achieved only during the initial years and over the years PLF expected to drop to module degradation and aging of equipments which lead to frequent outages and reduces the plant availability. Based on data provided by PP, it was observed that there was drop in PLF of 4.6 % between year 2018 and 2019 and with this rate of drop on PLF, the actual PLF of the plant at 10 years

	will be around 16% which is lower than estimated PLF in the PDD. However, the increased PLF is crosschecked with the breaching value of IRR and the result IRR found within limit. IRR will reach the benchmark when the PLF reach 24.67%. VVB concludes on the estimated IRR value based on increased PLF that IRR is below the benchmark and no impact on additionality. Verification team also checked during site visit and confirmed that no change in project design occurred since installation of project which can affect generation of electricity.

In summary, verification team confirms that actual emission reduction is higher than the estimate of the registered for the current monitoring period.

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

Opinion:

a) In opinion of the assessment team the implementation and operation of the project activity is in compliance with the description in the PDD V05.

b) There is no revision in monitoring plan or post registration change for the current monitoring period.

c) The actual emission reductions for the current monitoring period are 229,232 tCO_2e which are higher than the estimated ERs (191,971 tCO_2e) for the comparable period.

3.3 Compliance of the Monitoring Plan with the Monitoring Methodology

The verification team is able to confirm that the monitoring plan contained in the PDD version 05.0 is in accordance with the approved methodology applied by the project activity — ACM0002 Version 17.0 /13/ Consolidated baseline methodology for grid-connected electricity generation from renewable sources.

The monitoring plan and the monitoring system implemented are in compliance to the applied monitoring methodology ACM0002 Version 17.0. All other requirements of the applied methodology are met. Furthermore, it can be confirmed that the ex-ante value for grid emission factor (EF) sourced from latest CEA database in the registered PDD has been correctly applied in the calculation of emission reductions. The verification team confirms that the monitoring plan of the CDM project activity complied with the applied methodology.

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

Opinion:
The monitoring plan mentioned in the registered PDD is in line with the applied methodology i.e. — ACM0002 Version 17.0, Consolidated baseline methodology for grid-connected electricity generation from renewable sources. The monitoring mechanism is in line with the methodology and is effective and reliable.

3.4 Completeness of Monitoring

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

The verification team reviewed the actual monitoring during the skype interview and from document review and compared it against the requirements of the monitoring plan in the PDD /10/ and found in line.

The verification team assessed the monitoring techniques and each monitoring value in the monitoring report; and provided a short summary on the verification of every parameter listed in the monitoring plan and used for calculation of emission reductions.

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

$EF_{grid,OM,y}$, **$EF_{grid,BM,y}$**, & **$EF_{grid,CM,y}$** were mentioned as ex-ante fixed parameter.

The value for **$EF_{grid,OM,y}$**, **$EF_{grid,BM,y}$**, &**$EF_{grid,CM,y}$** was considered from CO_2 Baseline Database Version 11.0 for the Indian Power Sector prepared by Central Electricity Authority, Ministry of Power, Government of India. The default value as mentioned in the registered PDD and MR are same. The value of combined margin in India is being given by CEA (Central Electricity Authority, Govt of India) and thus assessment team concludes that the value is correct and appropriate. The default value in turn is used for baseline calculation as per the formula given in the registered PDD for the current monitoring period. Assessment team checked the values, source of data, choice of data, purpose of the data mentioned in the MR from the registered PDD and confirms that the similar approach was considered for the current monitoring period also.

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

$EF_{grid,OM,y}$- Relevant SDG Indicator= SDG13: Climate Action= 0.9941 tCO_2e/MWh
$EF_{grid,BM,y}$- Relevant SDG Indicator= SDG13: Climate Action= 0.9285 tCO_2e/MWh
$EF_{grid,CM,y}$- Relevant SDG Indicator= SDG13: Climate Action= 0.9777 tCO2e/MWh

b. Data and parameters monitored

Relevant SDG Indicator	SDG 13 : Climate Action
Data/parameter:	$EG_{facility,y}$
Unit	MWh
Description	Quantity of Net Electricity supplied to the grid in year y
Measured/calculated/default	Continuous recording and monthly
Source of data	Monthly Joint Meter Reading records
Value(s) of monitored parameter	2020 –177,960 2021 - 56,501 Quantity of net electricity generated and fed into grid checked with monthly JMRs and found the values to be consistent with JMRs which are the basis for invoicing. JMRs also cross checked with invoices.
Monitoring equipment	Tri-Vector type Availability Based Tariff Energy meter Accuracy class: 0.2s All the meters were calibrated as per the requirement, the details of calibration have been provided in Appendix 2 of the report.
Measuring/reading/recording frequency:	Measurement - Continuous Recording - Monthly
Calculation method (if applicable):	Net electricity supplied calculated based on the difference between values of "export" and "import" on the EB energy meter at the Government substation (evacuation point). (Net Electricity = Export – Import) The export and import of electricity reading sourced from the monthly generation statement/JMR. There are two bays and electricity is evacuated to the GSS through two lines and each has a dedicated set of main and check meter.
QA/QC procedures:	Quantity of net electricity supplied is cross-verified with the invoice raised. As per PDD V05, calibration is to be done once in five years.
Cross Checks	The value was cross checked between JMR, Invoices and site log book.

Relevant SDG Indicator	8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities
Data/parameter:	Quantitative employment and income generation
Unit	Cost spent for O&M Number of O&M staffs involved in the project
Description	Total employment generated due to the implementation of project activity and the amount spent for O&M activities due to the project.

<table>
<tr><td>Measured/calculated/default</td><td>Not Applicable</td></tr>
<tr><td>Source of data</td><td>Plant records/ HR records/ Letter from O&M contractor (PP in this case) for employment generation/ DOE interview with employees, local stakeholders etc</td></tr>
<tr><td>Value(s) of monitored parameter</td><td>The project created over 80 jobs for over a span of 9 months during construction and during the operational phase is generating employment in rural areas to the extent of 100 people at any given point of time. About 620 lakh INR has been spent in the operation and maintenance of the power plant during the monitoring period. The O&M service provider (PP in this case) maintains a healthy number of employees at the site, and also hires locally for unskilled workers; which helps in creating service based jobs in the project region. Below table reflects number of people employed in the project:

<table>
<tr><th rowspan="2">Vintage</th><th rowspan="2">Cost Spent on O&M (Lakh INR)*</th><th colspan="3">Number of Staff</th></tr>
<tr><th>Security (third party)</th><th>Cleaning (third party)</th><th>O&M (Orange Suvaan)</th></tr>
<tr><td>2020</td><td>142</td><td>63</td><td>3</td><td>27</td></tr>
<tr><td>2021</td><td>1439</td><td>63</td><td>3</td><td>27</td></tr>
<tr><td>Total</td><td>1581</td><td>NA</td><td>NA</td><td>NA</td></tr>
</table>

*O&M Cost has been considered from Audited financial statements
The EPF challan has been submitted which shows number of staffs appointed by the PP. Also the security service contract and cleaning service contracts are submitted to VVB for verification.

The parameter has a positive impact as the project results in direct employment and income generation.</td></tr>
<tr><td>Monitoring equipment</td><td>The total number of persons working in the plant would be calculated based on source of data provided above. This parameter also monitors number of men/women employed by the project activity. The project activity ensures that "equal pay for work of equal value" for both men and women and there is no any discrimination against women. "The employment covers number of men and number of women employed by the project activity. The job is of type temporary/permanent or skilled/unskilled, etc. Also it is ensued that peoples will get equal payment for equal work. The</td></tr>
</table>

	payment will be based on work and no any gender inequality for payment for work of equal value. The employment generated refers to overall jobs created during project implementation and during project Operation and Maintenance. This is primary and direct effect on employment generated due to project activity. The effect of employment generation is not be 'one off' or an effect generated in design, construction, distribution or start-up or decommissioning of the Project."
Measuring/reading/recording frequency:	Yearly
Calculation method (if applicable):	Not Applicable
QA/QC procedures:	The number of persons employed would be monitored in the plant register, which can be crossed checked with daily attendance register.
Cross Checks	Employment records/ Training records

Relevant SDG Indicator	8.5.2: Unemployment rate, by sex, age and persons with disabilities
Data/parameter:	Quality of employment
Unit	Number of trainings provided to employees and O&M staff
Description	Trainings provided to employees & O&M staffs
Measured/calculated/default	Not Applicable
Source of data	Training Records, HSE & HR records
Value(s) of monitored parameter	2020 - 25 2021 -03 PP has confirmed, total 28 nos of trainings conducted during this monitoring period. 25 training conducted in year 2020 and 03 in 2021, total 28 nos. of training conducted. VVB confirmed the details provided in MR with training register and the attendance sheet and also cross checked by conducting interviews during site visit.
Monitoring equipment	Together with the technology supplier, the Project organise training for the staff on the technology and the monitoring of the plant operation, and the emergency and safety procedures.
Measuring/reading/recording frequency:	Annually
Calculation method (if applicable):	Not Applicable
QA/QC procedures:	The training records of all the employees
Cross Checks	Training records

Safeguarding Principle	Safeguarding Principle 3.3 Community Health, Safety and Working Conditions
Data/parameter	Safety of workers
Unit	Safety procedures followed: • Operating staffs are provided with helmet, shoes & gloves • Conduct safety training to the O&M staffs yearly
Description	The EHS team is responsible for ascertaining the safety procedures are followed, some being: - • Proper training to all the workers at site • Safety gear mandatory while Working at heights and inside the site location • Job card in conformity with safety protocol released before taking up any task by O&M team • Implementation of Loading & Unloading protocols • Use of vehicles with PUC & proper maintenance of vehicles • Control speed of vehicles
Source of data	Site Records of helmet, shoes & gloves distributed to staffs & Records of safety training
Value(s) of monitored parameter	All the safety procedures proposed are followed at the site VVB has confirmed, through interview with PP representatives and local stakeholders during remote audit that PPEs (Personal Protective Equipment) distributed to all site employees and regular safety trainings provided as confirmed through training records of this monitoring period.
Means of verification	All the safety procedures proposed are followed at the site VVB has confirmed, through interview with PP representatives and local stakeholders during site visit that PPEs (Personal Protective Equipment) distributed to all site employees and regular safety trainings provided as confirmed through training records of this monitoring period.
Cross Checks	Interview with stakeholders

Safeguarding Principle	Safeguarding Principle 3.4.2 Forced Eviction and Displacement
Data/parameter	Involuntary Resettlement & expropriation
Unit	Resettlement or Grievance
Description	The project activity does not involve in any involutory resettlement. Further all the land purchased is private land purchased from on mutual consent. The project proponent ensured the following during land purchase: No land with existing structures was purchased No land from any marginalized farmers was purchased There were no settlements in vicinity of the chosen site All the purchase process followed national and state laws for land purchase. As the purchase of land is a voluntary process it does not involve "The National Rehabilitation and Resettlement Policy, 20072
Source of data	Interview with local villagers & Grievance register

Value(s) of monitored parameter	All the mitigation measures are followed during the land purchase. No grievances received during the monitoring period . VVB has confirmed, through interview with PP representatives, O&M contractor (PP) and local stakeholders during site visit and they confirmed all mitigation measure followed during land acquisition and purchase. Grievance register also checked and confirmed that no inputs/ grievances received during monitoring period.
Means of verification	All the mitigation measures are followed during the land purchase. No grievances received during the monitoring period. VVB has confirmed, through interview with PP representatives, O&M contractor (PP) and local stakeholders during site visit and they confirmed all mitigation measure followed during land acquisition and purchase. Grievance register also checked and confirmed that no inputs/ grievances received during monitoring period.
Cross Checks	Interview with stakeholders

Safeguarding Principle	Safeguarding Principle 4.3.4: Release of pollutants
Data/parameter	Air Quality
Unit	CO2 emission reduction and reduction in dust generation
Description	In order to reduce dust emissions during the construction phase, the following dust suppression measures stipulated and implemented: Spraying water and covering material trucks' body to minimize dust; Reuse of water for sprinkling of unpaved roads. Imposition of speed controls for vehicles and unpaved site roads; Well-maintained diesel-powered mechanical equipment to avoid black smoke emissions; Shut-down of diesel-powered mechanical equipment or trucks inside the worksites when they are not in operation.
Source of data	Dust reduction measure: Project logbook, or interview with maintenance staff. CO2 emission reduction: Central Electricity Authority: "CO2 Emission Database CEA CO2 Baseline database Version 11" published by Central Electricity Authority (CEA), Ministry of Power, Government of India
Value(s) of monitored parameter	Dust reduction measure: All the mitigation measures proposed are installed CO_2 emission reduction: 2020 - 173,991 tCO_2e 2021 – 55,241 tCO_2e Total - 229,232 tCO_2e PP has confirmed, through interview with O&M contractor (PP in this case) and local stakeholders during site visit and they confirmed all mitigation measure were in place during construction

	phase to mitigate air pollution. Using CEA database, ver. 11, total emission reductions calculated during monitoring period.
Means of verification	No monitoring equipment used Dust reduction measure: Project logbook, or interview with maintenance staff. CO_2 emission reduction: Amount of annual net electricity generation will be used to calculate estimated CO_2 emission reductions by project activity
Cross Checks	Interview with stakeholders

The verification team confirms;

a) The monitoring plan implemented is in line with monitoring plan included in approved GS4GG PDD.
b) The monitoring complies with the requirement of the applied methodology.
c) The information inflow (from data generation, aggregation, to recording, calculation and reporting) is included above under each parameter and confirms to the requirement of the approved PDD.
d) The values included in the monitoring report and corresponding emission reduction sheets are verified, cross checked and included under each monitoring parameter, wherever appropriate
e) The findings relevant to each parameter, wherever appropriate are discussed in detail in Appendix 1 of this report.

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

c. Implementation of sampling plan

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 JMR issued by State electricity board /Invoices etc. and hence sampling plan was not required. The verification team hereby confirms that has checked all the documents.

d. 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 during verification site visit. The Calibration details are presented in Appendix 2 of this report. Calibration of meters carried out by a DISCOM (MAHAVITARAN) which is state utility of Maharashtra.

Assessment team checked the same and found that the calibration is appropriate and correct as traceability is ensured. The meters were calibrated as per the norms of NABL and the meters are within the permissible error limit.

3.5 SDG Outcomes Monitoring

For Contributions to Sustainable Development

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

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

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

Item	Baseline estimate	Project estimate	Net benefit
SDG 7: Affordable and Clean Energy	Electricity supplied to grid = 0 MWh	Electricity supplied to grid = 234,462 MWh	Electricity supplied to grid = 234,462 MWh
SDG 8: Decent Work and Economic Growth			
Trainings provided to O&M staff (Nos)	0	28	28
Money spent on O&M (Lakh INR)	0	1581	1581
Jobs Created (Nos)	0	93	93
SDG 13: Climate Action	0 tCO_2e	229,232 tCO_2e	229,232 tCO_2e

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

Item	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period
SDG 7: Affordable and Clean Energy	196,349 MWh electricity generation	234,462 MWh electricity generation
SDG 8: Decent Work and Economic Growth	No. of trainings given: 04 O&M Cost: 466.6 Jobs created: 25	No. of trainings given: 28 O&M Cost: 1581 lakh INR Jobs created: 93
SDG 13: Climate Action	191,971 tCO_2e emission reduction	229,232 tCO_2e emission reduction

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

evidence as per the required monitoring frequency and found to be correct and appropriate meeting the requirements of the applied methodology and registered PDD.

Assessment team also confirm that the projects are not registered under the Indian domestic REC mechanism and the same can be cross-checked at *https://recregistryindia.nic.in*. Also, International REC (I-REC) registry (https://evident.services/device-register) is cross-checked and found that this project is not under I-REC as well. Thus, double counting for the current monitoring period is ruled out.

Assessment team also checked the other registry like UNFCCC and VCS and found that project is not registered with UNFCCC or VCS.

As a part of continuous feedback from stakeholders, the grievances register is being placed at site and is being continuously monitored and addressed through the grievances cell on regular basis and maintained in a register at Orange Suvaan Energy Private Limited site office. The comments received have been described in the Monitoring report along with the actions undertaken. The grievance register provide to verification team was also checked it was found that during the current monitoring period, no comments/feedbacks were received from the local stakeholders.

Also during the remote audit, Applus+ Certification conducted skype interviews with the project owner and local stakeholders please find the summary of the interview as below:

Sections	Debriefing
Trainings & salaries of the employees	During the skype call, Mr. Pushpinder Hira, PP representative team was interviewed. It was noted that regular technical & non-technical trainings were conducted and the salaries are in line with the industry standard.

As per MR, there is no legal challenges have arisen during the monitoring period. The assessment team confirmed the same through interview with PP and checking the publicly available information in online.

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

3.6 Assessment of Data and Calculation of Greenhouse Gas Emission Reductions

As a result of verification of the ER calculation process, the assessment team confirmed that all the parameters required for the determination of the emission reductions have been included in the Monitoring report Version 01 & Monitoring report Version 02 and corresponding ER calculation spreadsheets and are consistent with the applied methodology ACM0002 17.0 and the monitoring plan contained in the 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 02 and corresponding ER calculation spreadsheets. The verification process for

the same has been clearly described in above section of the report. See below for the detailed data:

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

Project emissions:

Project Emissions, $PE_y = 0$

Emission reductions:

Calculation of baseline emission is as follows;
$BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$

Where,
BE_y = Baseline emissions in year y (tCO_2/yr)

$EG_{PJ,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh

$EF_{grid,CM,y}$ = Combined margin CO_2 emission factor for grid connected power generation in year y i.e. 0.9777 tCO_2/MWh

As per ACM0002, Version 17.0, when the project activity is installation of Greenfield power plant, then:
$EG_{PJ,y} = EG_{facility,y}$

Where,
$EG_{facility,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)
= 234,462 x 0.9777
= 229,232 tCO_2e (Rounded down)

3.7 Management and Operational System

The responsibilities of data measurement, collection, verifying, archiving etc. have been clearly defined in the approved PDD V04. The same practice is followed onsite and it is confirmed by the assessment team during the remote audit. The data related to ER calculation as well as data monitoring, collection process etc. have been internally reviewed by the management of the Monitoring team regularly. The responsibility of each function is consistent with the monitoring plan in the registered PDD.

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

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

attendance sheet) has been checked by the assessment team and it is confirmed that the monitoring personnel are sufficient train to perform the monitoring.

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

4. REFERENCE

LIST OF DOCUMENTS	
S. No.	**Document/Evidence/Reference/Web link, Version, Date**
/01/	GS MR 5928 Version 01
/02/	GS MR 5928 Version 02.1
/03/	Emission reduction Sheet version 01
/04/	Emission reduction Sheet version 02
/05/	Joint Meter Reading (JMR)/ Invoices
/06/	Actual geo-coordinates
/07/	Break Down details of plant
/08/	Calibration certificates
/09/	Training record
/10/	Registered PDD
/11/	EHS Policy
/12/	GS registered Validation Report
/13/	ACM0002 Version 17.0 Methodology
/14/	CDM VVS version 02 for the project activities
/15/	The Gold Standard for Global Goals "Principles and Requirement" V 1.2
/16/	Employment records
/17/	Commissioning certificates for the power plant
/18/	Log book records for scheduled maintenance of the power plant for the complete monitoring period
/19/	Grievance Register
/20/	CSR Records
/21/	EPF Challan
/22/	Project O&M HSE logbook, or interview with maintenance staff

LGAI Technological Center, S.A.
Campus UAB – Ronda de la Font del Carme, s/n
08193 Bellaterra – Barcelona
(Spain)
Tel.:+34 93 567 20 08
Fax.:+34 93 567 20 01
www.appluscertification.com

5. FINAL VERIFICATION STATEMENT

Applus+ Certification has been engaged by Orange Suvaan Energy Private Limitedto perform the 3rd periodical verification of the "2x50 MW Orange Suvaan Solar Photovoltaic Power Project in Maharashtra, India"

The management of Orange Suvaan Energy Private Limitedis 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 Ver. 05 and the applied methodology ACM0002 Version 17.0

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

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

In our opinion, the GHG emission reductions for "2x50 MW Orange Suvaan Solar Photovoltaic Power Project in Maharashtra, India" for the monitoring period 01/02/2020 to 31/03/2021 (Both days included) as reported in Monitoring Report, prepared on the basis of the project's Monitoring Plan are fairly stated.

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

Reporting period:	01/02/2020 to 31/03/2021 (Both days included)

Verified emissions in the above reporting period:

Leakage emissions	0 tCO_2e equivalents
Project emissions	0 tCO_2e equivalents
Baseline emissions	229,232 tCO_2e equivalents
Emission reductions	229,232 tCO_2e equivalents

LGAI Technological Center, S.A.
Campus UAB – Ronda de la Font del Carme, s/n
08193 Bellaterra – Barcelona
(Spain)
Tel.:+34 93 567 20 08
Fax.:+34 93 567 20 01
www.appluscertification.com

Date: 21/10/2021

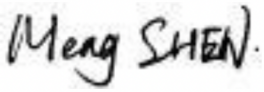
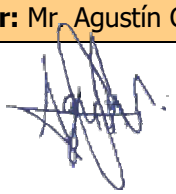
Lead Auditor: Mr. Pankaj Kumar

Tech. Expert: Mr. Pankaj Kumar

Tech. Reviewer: Mr. Simon Shen

Approver *(Applus+ Certification VVB Technical Manager)*

Mr. Agustín Calle de Miguel

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

LGAI Technological Center, S.A.
Campus UAB – Ronda de la Font del Carme, s/n
08193 Bellaterra – Barcelona
(Spain)
Tel.:+34 93 567 20 08
Fax.:+34 93 567 20 01
www.appluscertification.com

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

Type:	☐ CAR ☒ CL/CR ☐ FAR	Number:	01
Raised by:	Pankaj Kumar	Ref. to checklist in above tables:	C
Description of the audit finding		Date:	06/08/2021
1. In sec. C, language of the description of monitoring is in future tense which is not appropriate. This is verification and language of the MR should reflect the processes being followed at site. PD shall reframe the language			
Project Participant's response		Date:	07/08/2021
The language in section C of the description of monitoring has been reframed now based on the monitoring procedures followed during the monitoring period			
Documentation provided as evidence by Project Participant			
Auditor's assessment comment		Date:	26/08/2021
PP has reframed language in section C of the description of monitoring which is based on the monitoring procedures followed during the monitoring period which is checked and verified Comment closed			

Type:	☐ CAR ☒ CL/CR ☐ FAR	Number:	02
Raised by:	Pankaj Kumar	Ref. to checklist in above tables:	D.1
Description of the audit finding		Date:	06/08/2021
1. In sec. D.1, For Operating margin value (ex ante parameter), CEA database, ver. 1 mentioned as source. 2. In SGP 3.4.2 (Forced eviction and displacement), R&R policy, 2007 referred which is superseded by R&R Act, 2013.			
Project Participant's response		Date:	07/08/2021
1. The source of operating margin is changed to CEA database, version 11.0 which is the correct version 2. The reference to R&R policy,2007 is now updated to R&R Act, 2013 in the MR.			
Documentation provided as evidence by Project Participant			
Auditor's assessment comment		Date:	26/08/2021
1. In sec. D.1, For Operating margin value (ex-ante parameter), CEA database version is now corrected to version 11.0 which is checked and accepted. 2. In SGP 3.4.2 (Forced eviction and displacement), R&R policy, 2007 referred is now deleted and R&R Act, 2013 is mentioned which is accepted and verified. Comment closed			

LGAI Technological Center, S.A.
Campus UAB – Ronda de la Font del Carme, s/n
08193 Bellaterra – Barcelona
(Spain)
Tel.:+34 93 567 20 08
Fax.:+34 93 567 20 01
www.appluscertification.com

Appendix 2: Calibration details of monitoring meters

The meter number and calibration dates & validity provided below:

Line 1:

Details	Main Meter	Check meter	Standby meter
Meter Number	2831505	2831506	2831507
Make	Elster	Elster	Elster
Accuracy Class	0.2S	0.2S	0.2S
Calibration dates	08/01/2018 25/01/2019 24/06/2020	08/01/2018 25/01/2019 24/06/2020	08/01/2018 25/01/2019 24/06/2020
Calibration due date*	24/06/2025	24/06/2025	24/06/2025

Line 2:

Details	Main Meter	Check meter	Standby meter
Meter Number	2831508	2831509	2831510
Make	Elster	Elster	Elster
Accuracy Class	0.2S	0.2S	0.2S
Calibration dates	08/01/2018 25/01/2019 24/06/2020	08/01/2018 25/01/2019 24/06/2020	08/01/2018 25/01/2019 24/06/2020
Calibration due date*	24/06/2025	24/06/2025	24/06/2025

On 6th November 2020 Main meters for both the lanes are replaced with the check Meters and new meters were installed in place of Check meters and new meter details are given below

Line 1:

Details	Main Meter	Check meter	Standby meter
Meter Number	2831506	2897467	2831505
Make	Elster	Elster	Elster
Accuracy Class	0.2S	0.2S	0.2S
Calibration dates	08/01/2018 25/01/2019 24/06/2020	08/01/2018 25/01/2019 24/06/2020	08/01/2018 25/01/2019 24/06/2020
Calibration due date*	24/06/2025	24/06/2025	24/06/2025

Line 2:

Details	Main Meter	Check meter	Standby meter
Meter Number	2831509	2897648	2831508
Make	Elster	Elster	Elster
Accuracy Class	0.2S	0.2S	0.2S
Calibration dates	08/01/2018 25/01/2019 24/06/2020	08/01/2018 25/01/2019 24/06/2020	08/01/2018 25/01/2019 24/06/2020
Calibration due date*	24/06/2025	24/06/2025	24/06/2025

*The calibration frequency requirement is once in 5 years

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Appendix 3: Audit Team CVs

Name	SHORT CV. BACKGROUND INFORMATION
Mr. Pankaj Kumar	Mr. Pankaj Kumar has done M. Sc in Environment Management from Forest Research Institute, Dehradun and B. Sc. (Hons.) in Environment & Water Management from Magadh University, Bihar, India. He has also done Post Graduate Diploma in Environmental Law from NLSIU, Bangalore. He has more than 12 years of working experience in GHG Assessments and has participated during his career in Agencies and DOEs like MITCON, Agrinergy, Carbon Check and is empanelled with Applus+ Certification since 2015 for the performance of CDM/VCS/GS project assessments. He has extensive experience in the Renewable, Waste Management and Energy Demand Scopes of UNFCCC CDM and has done more than 100 Validations and Verifications of PAs and PoAs as Lead Auditor, Technical Expert and Technical Reviewer, mainly in Asia, Africa, USA, Asia Pacific and Americas under CDM, Verified Carbon Standard, Gold Standard & Social Carbon Standard, Brazil. He is an experienced, qualified and result oriented Environment and climate change professional having 16 yrs. of relevant experience in Climate Change (Mitigation & Adaptation), Environmental Due Diligence, Disaster Risk Reduction, Climate finance, adaptation planning, capacity building, validation and verification of GHG project. He can also provide technical support for environmental investigative, remedial projects involving air, water and soil, Waste management, EIA, Environmental Compliance, ISO 14001, OHSAS 18001, GHG accounting (ISO 14064) and Carbon foot printing.
Mr. Simon Shen	Mr. Simon Shen (Master's Degree in Thermal Energy Engineering, Bachelor's Degree in Environmental Engineering) is an Auditor appointed by Applus+ LGAI for the GHG project assessment, auditing and technical review. He has more than 6 years of work experience in CDM/GS4GG/VCS project assessment and review with Applus+, apart from the years of experience working as GHG Auditor and ISO 9001/14001 in TUV SUD for 3.5 years before he joined Applus+. Mr. Simon Shen has extensive experience also as former Applus+ Shanghai CDM Technical Manager.