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

Project Title:	2X 50 MW Orange Suvaan Solar Photovoltaic Power Project in Maharashtra, India
Monitoring Period:	01/07/2018 to 31/01/2020 (Both days included)
GS project ID:	GS 5928
Internal ID:	1720
Customer:	Orange Suvaan Energy Private Limited
Date:	01/04/2020
Revision:	00

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SUMMARY			
Reference No.	**Date** *(first version)*	**Version No.**	**Date** *(last version)*
GS 5928	01/04/2020	01	01/04/2020
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	Maharashtra		
Contact Person	Mr. Murali Krishnam Raju		
Monitoring Period:	01/07/2018 to 31/01/2020 (Both days included)		
GS4GG Version: GS4GG Principles and Requirements 1.2 GS4GG Activity Requirements: RE Activity Requirements Applied Methodology Version: ACM0002 Version 17.0. Consolidated baseline methodology for grid-connected electricity generation from renewable sources. Current Methodology Version: As this is verification applied methodology is equal to current methodology		GS4GG Sectoral Scope: 2 UNFCCC CDM Sectoral Scope: 1 Technical Area: 1.2	
Published Monitoring Report Version: 01 Date: 11/02/2020		Final Monitoring Report Version: 02 Date: 31/03/2020	
Certified Project Design Document Version: 05 Date: 26/03/2018 GS Passport Version (if applicable): Version 05, dated 26/03/2018			
Estimated Annual Emission Reductions: 164,869 tCO_2e			
Actual Emission reduction achieved: 314,078 tCO_2e			
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 Orange Suvaan Energy Private Limited to perform the 2nd periodical verification of "**2x50 MW Orange Suvaan Solar Photovoltaic Power Project in Maharashtra, India**" (Ref. No. 5928) 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 site visit have been conducted to verify the data submitted in the monitoring report. Applus+ Certification confirms the following have been reviewed: a. The GS PDD V 05 including the monitoring plan and the corresponding validation report; b. GS4GG Transition Annex.			

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c. Monitoring report(s);
d. The applied monitoring methodology;
e. Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board;
f. The Gold Standard for Global Goals "Principles and Requirements" Version 1.2 and GS4GG guideline and related Annex.
g. 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 PV 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 (18/09/2018- 17/09/2023)

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 314,078 tCO_2e emission reductions during period 01/07/2018 to 31/01/2020 (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
Auditor: Sukanta Das	☐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
AMS	Approved Methodology Small Scale
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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Table of Content

Contents

Appendix:

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

Appendix 2: Calibration details of monitoring meters.

Appendix 3: Audit Team CVs.

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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 2nd 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 DOE. The verification is based on the submitted monitoring report, the validated 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 tCO_2e/ 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 Crystalline
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 Power
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/ 11 kV

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 a site visit 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 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	YES	YES

Mr. Sukanta Das	A	YES	YES	YES	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 DOE 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 Passport, 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 part of the verification, the on-site inspection in the state of Maharashtra been performed by the assessment team.

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Raju	Murali Krishnam	PP representative	16/03/2020	Project implementation, Baseline emissions, ER calculations, Sustainable monitoring etc.	Mr. Pankaj Kumar
3	Kamble	Vishwas	AGM, Orange Suvaan Energy Private Limited	16/03/2020	Stakeholder meeting- Employment opportunities, Standard of Livings etc.	Mr. Pankaj Kumar
4	C	Chandrakant	Dy. Manager, Orange Suvaan Energy Private Limited	16/03/2020	Stakeholder meeting- Noise pollution if any, Standard of Livings etc.	Mr. Pankaj Kumar
5	Bhamare	Uddhav	Local stakeholder	16/03/2020	Stakeholder meeting-Soil Erosion if any, Standard of Livings etc.	Mr. Pankaj Kumar

The objective of the on-site assessment 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, Passport 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 Sustainability monitoring plan as per the registered Passport
- To understand grievance (if any) from the villagers during the monitoring period.

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:00 CR: 04 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 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

No FARs envisaged from previous verification and or Validation. This is 2nd periodic verification for 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 on-site. 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 Suvaan Energy Private Limited
Title of project activity	2x50 MW Orange Suvaan Energy Private Limited
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 - Consolidated baseline methodology for grid-connected electricity generation from renewable sources.
Project type	The purpose of the project activity is to generate electricity using solar PV technology. It is a 2x50 MW large-scale grid connected solar PV power project.
Project scale	Large
Location of the project activity	The project located at Village - Mhasale, and District – Dhule of Maharshtra state of India
Project's crediting period	16/06/2017 to 16/06/2024 (1st Crediting Period)
Total duration of the project	07 years (Renewable crediting period)
Period verified in	01/07/2018 to 31/01/2020 (inclusive of both days)

this verification	

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 26/03/2018)

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 project activity under GS4GG Principles and Requirements	01/08/2018	Date of registration confirmed with GS4GG Transition document and found to be correct. https://registry.goldstandard.org/projects/details/1037

version 1.2		
Crediting period		
1st Monitoring period	16/06/2017 to 30/06/2018	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	164,869 tCO_2e As per PDD V05, ER for 365 days- 164,869 tCO_2e and for this MP, total days are 580. Accordingly, emission reduction for this MP, estimated as 261,984. Plz refer calculation in ER Spread sheet
Actual Emission Reduction for the monitoring period	314,078 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 19.9% higher than the estimated emission reduction. The actual PLF achieved during the monitoring period is 23.08% against the estimated PLF of 19.25% as given in PDD. The high PLF is achieved due to higher radiation received, use higher efficient equipments and proper maintenance of the power plant that leads to higher plant availability. As per the registered PDD, the equity IRR will reach the benchmark when the PLF increased to 28.16% higher than estimated value (ie, achieving the PLF of 24.67%). Verification team confirmed that during this monitoring period, PLF achieved is less than breaching value of benchmark. Hence, the increase in generation/PLF does not affect the additionality of the project as the actual generation is only 19.9% higher than the estimated value Hence, increase in ERs than estimated value for this monitoring period is acceptable.

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 314,078 tCO_2e which are higher than the estimated ERs (261,984 tCO_2e) for the comparable period.

3.3 Compliance of the Monitoring Plan with the Monitoring Methodology

The DOE verification team is able to confirm that the monitoring plan contained in the PDD (version 5.0, dated 26/03/2018) is in accordance with the approved methodology applied by the project activity —ACM0002 Version 17.0. 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. 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 CEA data base in the registered PDD has been correctly applied in the calculation of emission reductions. The DOE 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. 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 (version 5.0, dated 26/03/2018). 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 site visit and from document review and compared it against the requirements of the monitoring plan in the PDD 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

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

The value for $\mathbf{EF_{grid,OM,y}}$, $\mathbf{EF_{grid,BM,y}}$, &$\mathbf{EF_{grid,CM,y}}$ was considered from the CO_2 baseline database published by Central Electricity Authority (CEA) version 11.0. 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 is 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: Cimate 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 tCO_2e/MWh

b. Data and parameters monitored

Relevant SDG Indicator	SDG 13 : Climate Action
Data/parameter:	EGfacility,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	2018 – 97,301 2019 – 206,876 2020 – 17,066 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	SDG 7.1.1: Proportion of population with access to electricity
Data/parameter:	Access to affordable and clean energy services
Unit	MWh
Description	Quantity of Net Electricity supplied to the grid in year y
Measured/calculated/default	Measured
Source of data	Monthly Joint Meter Reading and invoices
Value(s) of monitored parameter	2018 – 97,301 2019 – 202,262 2020 – 16,685 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:	Yearly
Calculation method (if applicable):	Not applicable
QA/QC procedures:	Not applicable
Cross Checks	The value was cross checked between JMR, Invoices and site log book.

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	2018-19: 07 2019-20 : 13 PP has confirmed, total 20 no. of trainings conducted during this monitoring period. 07 training conducted in year 2018 -19 and in 2019-20, total 13 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.

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.
Measured/calculated/default	Not Applicable
Source of data	Plant records/ HR records/ Letter from O&M contractor (PP in this case) for employment generation/ DOE interview with employees, local stakeholders etc
Value(s) of monitored parameter	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:

Year	Number of Staff			
	Security	Cleaning	O&M	Total

	<table><tr><td></td><td>(third party)</td><td>(third party)</td><td>(Orange Suvaan)</td><td></td></tr><tr><td>2018</td><td>37</td><td>3</td><td>32</td><td>72</td></tr><tr><td>2019</td><td>61</td><td>3</td><td>27</td><td>91</td></tr><tr><td>Average</td><td>47</td><td>3</td><td>30</td><td>79</td></tr></table> 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 verified by VVB and found to be correct. The parameter has a positive impact as the project results in direct employment and income generation.
Monitoring equipment	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 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	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.
Measured/calculated/default	calculated
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 CO2 emission reduction: 314,078 tCO2 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.
Monitoring equipment	No monitoring equipment used Dust reduction measure: Project logbook, or interview with maintenance staff. CO2 emission reduction: Amount of annual net electricity generation will be used to calculate estimated CO2 emission reductions by project activity
Measuring/reading/recording frequency:	Once in monitoring period
Calculation method (if applicable):	Not Applicable
QA/QC procedures:	In order to reduce dust emissions during the Operation phase, the following dust suppression measures stipulated and implemented: Imposition of speed controls for vehicles and unpaved site roads; Well-maintained diesel-powered mechanical equipment to avoid black smoke emissions;
Cross Checks:	Interview with stakeholders

Relevant SDG Indicator	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,
Measured/calculated/default	Not applicable
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.
Monitoring equipment	Not applicable
Measuring/reading/recording frequency:	Yearly once
Calculation method (if applicable):	Not Applicable
QA/QC procedures:	Not applicable
Cross Checks:	Interview with stakeholders

Relevant SDG Indicator	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

[2] http://www.dolr.nic.in/nrrp2007.pdf

	vehicles - Control speed of vehicles
Measured/calculated/default	Not applicable
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 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.
Monitoring equipment	Not applicable
Measuring/reading/recording frequency:	Yearly once
Calculation method (if applicable):	Not Applicable
QA/QC procedures:	Not applicable
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 site visit and interview.

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 = 321,243 MWh	Increase in electricity supply to grid = 321,243 MWh
SDG 8: Decent Work and Economic Growth	No of training = 0 Cost spent on O&M = 0 Lakh INR Number of O&M staff = 0	No of training = 20 Cost spent on O&M = 620 Lakh INR Number of O&M staff = 79	Increase in No of training = 20 Increase in cost spent on O&M = 620 Lakh INR Increase in number of O&M Staff employed = 79
SDG 13: Climate Action	GHG emission =314,078 tCO2e	GHG emission = 0 tCO2e	GHG Emission reduction = 314,078 tCO2e

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	Electricity supply to grid = 267,960 MWh	Electricity supply to grid = : 321,243 MWh
SDG 8: Decent Work and Economic Growth	No of training/ Workshop =05 Cost spent on O&M = 636 Lakh INR Number of O&M staff =25	No of training = 20 Cost spent on O&M = 620 Lakh INR Number of O&M staff =79
SDG 13: Climate Action	GHG Emission reduction = 261,984 tCO2e	GHG Emission reduction = 314,078 tCO2e

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.

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 site office. The comments received have been described in the Monitoring report along with the actions undertaken. The grievance register was also checked during the site visit and actions undertaken were discussed with the affected stakeholders and found that appropriate consideration of the comments have been taken by the project proponent.

Assessment team also checked that the projects are not registered under the REC mechanism of India and the same can be cross-checked at https://recregistryindia.nic.in. Thus double counting for the current monitoring period is ruled out.

Also during the site visit, Applus+ Certification conducted an interview with the project owner and local stakeholders please find the summary of the interview as below:

Sections	**Debriefing**
Trainings & salaries of the employees	During site visit Mr. Murali Krishnam Raju, of PP representative team was interviewed. It was noted that regular technical &nontechnical trainings were conducted and the salaries are in line with the industry standard.

Local stakeholder meeting details:

Name of the stakeholder	Vikas Kamble
Occupation	Farmer
DOE QUESTION: Did PP promised employment opportunity? Answer: Yes, PP told us that employment will be generated and the locals will be given priority. DOE also like to conclude that during the site visit it was observed that local people were employed for security and operation related work like water spraying, vegetation improvement and other unskilled work. DOE 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	Surendra Narkhede
Occupation	Villager
DOE questions: Did the power plant discharge any harmful pollutants? Answer: NO the plant does not discharge any harmful pollutants.	

DOE questions: Did the power plant destroy any crop fields? Answer: The plant is implemented in barren land and there were no any fertile land or crop which is damaged.

Name of the stakeholder	Vishal Mali
Occupation	Teacher
DOE question: Did the power plant produces noise which effect the livelihood of the Villager Answer: No. The locals are happy with the implementation of the project activity.	

Name of the stakeholder	Md. Anas
Occupation	Shopkeeper
DOE questions: Did the power plant causes any Soil erosion Answer: The project participant Excavated material stock piled and used for backfilling of foundations, platforms etc. They also have done Vegetation to avoid any kind of soil erosion.	

Name of the stakeholder	Gajanan Patankar
Occupation	Villager
DOE questions: Did the project help in improving the livelihood of the nearby local people Answer: Before the implementation of the project activity local people are employed as Labour in the Agricultural field and the Job is also not permanent. They are paid as per the requirement of the field and day work. After the implementation of the project activity the local people are employed with a permanent job and paid as per the minimum salary wages of the area. This not only improved the livelihood of the local villagers/peoples but also helped in improving the happiness quotient of the area.	

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 version 17

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,

$EG_{PJ,y}$ = 321,243 MWh

$EF_{grid,CM,y,y}$ = 0.9777 tCO_2e/MWh

Hence,

BE_y = 321,243 MWh * 0.9777 tCO_2e/MWh
= 314,078 tCO_2e

3.7 Management and Operational System

The responsibilities of data measurement, collection, verifying, archiving etc. have been clearly defined in the approved PDD V05. The same practice is followed onsite and it is confirmed by the assessment team during the verification site visit. 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 on-site verification, 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 get 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 1
/02/	GS MR 5928 Version 2
/03/	Emission reduction Sheet version 1
/04/	Emission reduction Sheet version 2
/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/	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.

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5. FINAL VERIFICATION STATEMENT

Applus+ Certification has been engaged by Orange Suvaan Energy Pvt. Limited to perform the 2nd periodical verification of the "2x50 MW Orange Suvaan Solar Photovoltaic Power Project in Maharashtra, India"

The management of Orange Suvaan Energy Pvt. 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 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 01/07/2018 to 31/01/2020 (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:	01/07/2018 to 31/01/2020 (Both days included)
Verified emissions in the above reporting period:	
Leakage emissions	0 tCO_2e equivalents
Project emissions	0 tCO_2e equivalents
Baseline emissions	314,078 tCO_2e equivalents
Emission reductions	314,078 tCO_2e equivalents

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Vintage wise yearly data is as below:

Emission Reduction for this monitoring period	314,078	tCO_2e
Emission Reduction for 2018	95,131	tCO_2e
Emission Reduction for 2019	202,262	tCO_2e
Emission Reduction for 2020	16,685	tCO_2e

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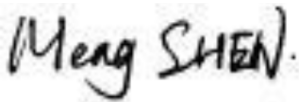
Date: 01/04/2020

Lead Auditor: Mr. Pankaj Kumar
Tech. Expert: Mr. Pankaj Kumar
Auditor : Mr. Sukanta Das
Tech. Reviewer: Mr. Simon Shen

Approver *(Applus+ Certification Business Unit Managing Director)*
Mr. Juan Sendín Caballero

ASSESSMENT TEAM	
Team Leader PANKAJ KUMAR	**Technical Reviewer:** SIMON SHEN
Signature: 	Signature: 
Approver: Mr. Juan Sendín Caballero	
Signature: 	

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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:	
Description of the audit finding		Date:	27/03/2020
1. In key project information (1st page of MR), SDG 7 outcome for this monitoring period mentioned as 321,243 MWh/year which is not correct as this value is for entire monitoring period			
Project Participant's response		Date:	31/03/2020
The net electricity generation (321,243 MWh) mentioned in the key project information is for entire monitoring period. The same has been corrected in the MR			
Documentation provided as evidence by Project Participant			
Revised MR (v2)			
Auditor's assessment comment		Date:	01/04/2020
1. PP has made necessary correction in key project information section in revised MR, ver. 2.0 dated 31/03/2020. VVB checked and confirm that SDG outcome for SDG 7 estimated as 321,243 MWh for entire monitoring period. **Comment closed**.			

Type:	☐ CAR ☒ CL/CR ☐ FAR	Number:	02
Raised by:	Pankaj Kumar	Ref. to checklist in above tables:	
Description of the audit finding		Date:	27/03/2020
1. Values for SDG 8 outcomes in current monitoring period is different than estimated values. Hence, these values need to be updated in sec. E.2 and key project information in GS4GG MR. 2. In sec. E.6, para 2, SDG 3 mentioned which seems to be incorrect. PP shall clarify.			

Project Participant's response	Date:	31/03/2020
1. The Value of SDG 8 outcomes in current monitoring period is correctly mentioned in the section E.2. However, the same was wrongly mentioned in the key project information which is now corrected. 2. The mistake has been rectified. The reference is changed to SDG 8 which is correct.		
Documentation provided as evidence by Project Participant		
Revised MR (v2)		
Auditor's assessment comment	Date:	01/04/2020
1. PP has made necessary correction in key project information section and provided the correct value of SDG 8 outcome in revised MR, ver. 2.0 dated 01/04/2020 which is consistent with the value mentioned in E.2. **Comment closed**. 2. PP has rectified typographical error in sec. E.6 of revised MR, ver. 2.0 dated 31/03/2020. **Comment closed.**		

Type:	☐ CAR ☒ CL/CR ☐ FAR	Number:	03
Raised by:	Pankaj Kumar	Ref. to checklist in above tables:	
Description of the audit finding		Date:	27/03/2020
1. For SDG 8 outcome in current monitoring period, PP shall provide HSE/ HR records and plant employment records 2. For sustainability principle, 4.3.4, PP shall provide project log book for review.			
Project Participant's response		Date:	31/03/2020
1. The following documents provided as HR Records/Employment records: EPF Challan (for internal employment records), Module cleaning contract & Security contract (for third party employment records). 2. The project logbook at the time of construction is required to confirm the parameter. Since the old logbook is not traceable currently, we request DOE to conclude the sustainability principle, 4.3.4 based on the interview with the maintenance staff.			
Documentation provided as evidence by Project Participant			

EPF Challan Module Cleaning Contract Security Contract HSE policy		
Auditor's assessment comment	Date:	01/04/2020
1. PP has provided copies of EPF Challan, module cleaning contract, security contract, HSE policy of O&M contractor and training records to support the SDG 8 outcome achieved during monitoring period which was reviewed by VVB and found to be appropriate and sufficient. **Comment closed.** 2. As PP clarified that project log book for construction phase could not be traced, VVB had a call with O&M contractor and interview with local stakeholders during site visit and confirm that project is not contributing to air pollution in operation stage. **Comment closed.**		

Type:	☐ CAR ☒ CL/CR ☐ FAR	Number:	04
Raised by:	Pankaj Kumar	Ref. to checklist in above tables:	
Description of the audit finding		Date:	27/03/2020
PP shall provide grievance register for review.			
Project Participant's response		Date:	31/03/2020
PP maintains grievance register forms at the site office to record any inputs/grievances received form stakeholders. During the monitoring period no grievances received from any stakeholders. The copy of grievance register form is now submitted to DOE for review.			
Documentation provided as evidence by Project Participant			
Grievance register form			
Auditor's assessment comment		Date:	01/04/2020
PP provided copy of grievance register maintained at site and VVB confirmed that no grievances received from stakeholders during the entire monitoring period which was also checked during site visit. **Comment closed.**			

Appendix 2: Calibration details of monitoring meters

The details of the energy meters are given 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	08/01/2018 25/01/2019	08/01/2018 25/01/2019
Calibration due date*	25/01/2024	25/01/2024	25/01/2024

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	08/01/2018 25/01/2019	08/01/2018 25/01/2019
Calibration due date*	25/01/2024	25/01/2024	25/01/2024

Appendix 3: Audit Team CVs

Name	**SHORT CV. BACKGROUND INFORMATION**
Mr. Pankaj Kumar	**Pankaj Kumar** worked as team leader – Bihar for South Asia Climate Proofing and Growth Development(CPGD) – Climate Change Innovation Programme (CCIP) supported by DFID that seeks to mainstream climate change resilience into planning and budgeting at the national and sub-national level in India,Pakistan, Nepal, and Afghanistan. Pankaj Kumar has worked previously with IL&FS Infrastructure Development Corporation and BUIDCO(Bihar Urban Infrastructure Development Corporation), Govt. of Bihar as Environmental Specialist for WB & ADB funded projects. Prior to this, he worked with Carbon Check (UNFCCC accredited DoE), Johannesburg, RSA as Team Leader for validation, verification of around 100 GHG projects in Asia, Africa, USA, Asia Pacific & Americas. Pankaj is accredited Lead Auditor, Validator, Verifier and Technical Expert for Sectoral Scope/Technical Area – 1.1, 1.2, 3.1 & 13.1 by UNFCCC DoE (Designated Operational Entity), APPLUS, Spain. He is also member of task force on climate change & human health, Health Department, GoB. He is an experienced, qualified and result oriented Environment Professional having more than 14 yrs. of relevant experience in Climate Change (Mitigation & Adaptation), Environmental Due Diligence, Disaster Risk Reduction, Validation and Verification of GHG project under CDM, Verified Carbon Standard, Gold Standard & Social Carbon Standard, Brazil. He provides technical support for environmental investigative, consultative and remedial projects involving air, water and soil, Waste management, EIA, Environmental Compliance, ISO 14001, OHSAS 18001, GHG accounting (ISO 14064) and Carbon foot printing

	Pankaj Kumar is Masters in Environment Management from Forest Research Institute (University), I.C.F.R.E, Dehradun, which is Centre of Excellence in South East Asia for Forestry education & research and PGDEL from National Law School of India University, Bangalore (India).
Mr. Simon Shen	**Mr. Meng (Simon) Shen** has Master degree in Thermal Energy Engineering, Bacheor Degree in Environment Engineering) is a Lead Auditor appointed by Applus+ LGAI for the GHG project assessment. He is based in Shanghai. He has several years of work experience in environment protection field. Before he joined Applus+ LGAI, he had been worked for TUV SUD as a GHG Validator/ Assessment team and ISO 9001/ 14001 Lead Auditors for 5 years
Mr. Sukanta Das	Mr. Sukanta DAS, has done M. SC in (Electronics and Photonics) and M. Tech in (Energy technology) from Tezpur Central University/ Indian Institute of technology Bombay in India. He is a certified lead auditor for ISO 14001 EMS LA and ISO 9001 QMS LA from International registry for Certified Auditors (IRCA) and Certified Lean Management practitioner from Quality Council of India (QCI). He has more than (11) years of working experience at TUV NoRD/ Re-consult/CRA/APPLUS certifications under various categories of projects stating from Renewable to waste to supercritical projects. He was JI/ CDM Lead Assessor in TUV NoRD and was involved in more than 100 CDM validation and verifications activities in Gold Standard, VCS, CDM projects as a team leader/technical reviewer / validator / verifier covering the sectoral scope 1, 13 technical areas 1.2/1.1/13.1. Currently he is associated with True Quality Certifications Private Limited and is empanelled withAPPLUS certification to carry out GHG audit.