

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



Project Title:	40 MW Orange Charanka Solar Power Project in Gujarat, India
Monitoring Period:	01/03/2020 to 31/12/2020 (Both days included)
GS project ID:	GS5866
Internal ID:	7521
Customer:	Orange Charanka Solar Energy Private Limited
Date:	07/01/2021
Revision:	02

SUMMARY			
Reference No.	Date <i>(first version)</i>	Version No.	Date <i>(last version)</i>
A+SH_SYST_TQC_GS_VER_7521	21/10/2021	02	07/01/2021
GS4GG Verification			
GS4GG Certified Product <i>(sought):</i>		GS VER	
GS4GG SDG Impact Statement <i>(sought):</i>		Impact Certification	
General Information			
Client	Orange Charanka Solar Energy Private Limited		
Project Title	40 MW Orange Charanka Solar Power Project in Gujarat, India		
Project Participants	Orange Charanka Solar Energy Private Limited		
Project Location	Charanka & Santalpur villages, District Patan, Gujarat, India		
Contact Person	Mr. Murali Krishnam Raju M		
Monitoring Period:	01/03/2020 to 31/12/2020 (Both days included)		
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 Current Methodology Version: ACM0002 "Grid-connected electricity generation from renewable sources" Version 20.0		GS4GG Sectoral Scope: 2 UNFCCC CDM Sectoral Scope: 1 Technical Area: 1.2	
Monitoring Report Version: 01 Date: 20/05/2021		Final Monitoring Report Version: 02.1 Date: 06/01/2021	
Certified Project Design Document Version: Assessment team checked the registered GS PDD version 04 dated 19/04/2018. Date: Provided above Final Passport, Version 04 dated 18/04/2018 GS4GG Transition Annex			
Estimated Annual Emission Reductions for the Monitoring period for all SDG: SDG 7: 86,347 MWh /Year 72,390 MWh for this monitoring period SDG 8: Minimum 1 training to be carried out annually / The income to all the workers are made in line with the minimum wage specified by the government time to time. SDG 13: 84,421 tCO2/year 70,775 tCO2e for this monitoring period			
Actual Emission reduction achieved for all SDG: SDG 7: 72,307 MWh for this Monitoring Period SDG 8: Trainings = 12 Trainings provided to staff /53 Lakh INR /32 number employment provided SDG 13: 70,694 tCO2 for this Monitoring Period			

SUMMARY
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 Charanka Solar Energy Private Limited to perform the 3rd periodical verification of "40 MW Orange Charanka Solar Power Project in Gujarat, India" (Ref. No. GS5866) applying the methodology ACM0002 Version 17.0. The management of Orange Charanka Solar Energy Private Limited is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions. A desk review and an interview have been conducted to verify the data submitted in the monitoring report. Applus+ Certification confirms the following have been reviewed: - The registered PDD including the monitoring plan & Transition Annex; - Monitoring report(s); - The applied monitoring methodology; - Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board; - GS4GG guideline and related Annex. - All information and references relevant to the project activity's resulting in emission reductions. Orange Charanka Solar Energy Private Limited (OCSPP) has set up a 40 MW solar power project in the villages of Charanka, Santalpur, District Patan in the State of Gujarat, India. Project activity is commissioned on 04/08/2017. The monitoring of emission reduction and sustainable development indicators has been carried out in accordance to respective registered PDD and Passport & Transition Annex. The electricity generated by the project is exported to the Indian electricity grid. The project activity therefore displaces an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid and there by reduces the associated CO₂ emissions. Applus+ Certification confirms that the project is implemented in accordance with the validated and registered PDD & Transition Annex. The monitoring plan complies with the applied methodology ACM0002 Version 17.0 and the 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 70,694 tCO₂e emission reductions during period 01/03/2020 to 31/12/2020 (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
Technical Expert: Mr. Pankaj Kumar	☐ IR ☐ EI ☒ OE	M/s True Quality Certifications Private Limited
Technical Reviewer: Mr. Simon Shen	☐ IR ☒ EI ☐ OE	Applus+ Certification

Note : In line with the GS Rule Update RU 2020 PR – PR V1.2 dated on 02/04/2020, the VVB hereby discloses that the VVB has performed Validation of this project with different team members. Completely different team of VVB carried out the verification exercise for this project activity.

ABBREVIATIONS	
ACM	Approved Consolidated Methodology
AM	Approved Methodology
AMS	Approved Methodology Small Scale
Applus+ LGAI / Applus+	LGAI Technological Center, S.A. (Applus+ Certification)
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CDM VVS version 02	CDM validation and verification standard for project activities, Version 03.0
CER	Certified Emission Reduction
CL / CR	Clarification Request
CM	Combined Margin
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor

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

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
OCSPPL	Orange Charanka Solar Energy Private Limited
OM	Operational Margin
PDD	Project Design Document
PP	Project Participant
SECIL	Solar Energy Corporation of India Limited
UNFCCC	United Nations Framework Convention for Climate Change
VVB	Validation and Verification Body
VVS	Validation and Verification Standard

Table of Content

Contents

1. INTRODUCTION.....	6
1.1 Objective	6
1.2 Scope	7
1.3 Description of the project activity	7
2. METHODOLOGY	7
2.1 Appointment of the assessment team.....	8
2.2 Document review	8
2.3 On site assessment and follow up interviews	9
2.4 Quality of evidences.....	10
2.5 Reporting of findings.....	11
2.6 Internal Quality Control.....	11
3. VERIFICATION FINDINGS.....	11

3.1	FARs from Validation / Previous Verification.....	11
3.2	Project Implementation in accordance with the registered Project Design Document	12
3.3	Compliance of the Monitoring Plan with the Monitoring Methodology	15
3.4	Completeness of Monitoring.....	15
3.5	SDG Outcomes Monitoring	17
3.6	Assessment of Data and Calculation of Greenhouse Gas Emission Reductions .	21
3.7	Management and Operational System	22
4.	REFERENCE	23
5.	FINAL VERIFICATION STATEMENT	25
	Appendix 1: Corrective Action Request/Clarification Request/Forward Action Request resolution table	27
	Appendix 2: Calibration details of monitoring meters.....	27
	Appendix 3: Audit Team CVs	30

1. INTRODUCTION

1.1 Objective

LGA Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by Orange Charanka Solar Energy Private Limited to perform the 3rd periodical verification of “40 MW Orange Charanka Solar Power Project in Gujarat, 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 Passport & Transition Annex 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 validation and verification standard for project activities, Version 03.0 for the project activities and Gold Standard (i.e., applicable GS4GG requirements);
- Ensure that the actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology;

- Evaluate the data recorded and stored as per the ACM0002 Version 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, registered PDD and registered Passport & Transition Annex 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 validation and verification standard for project activities, Version 03.0 for the project activities as well as the GS4GG guidelines, Applus+ Certification has applied a rule-based approach for the verification of the project. The principles of accuracy, completeness, relevance, reliability and credibility were combined with a conservative approach to establish a traceable and transparent verification opinion.

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

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

1.3 Description of the project activity

Orange Charanka Solar Energy Private Limited (OCSPL) has set up a 40 MW solar power project in the villages of Charanka, Santalpur, District Patan in the State of Gujarat, India.

Project activity is commissioned on 04/08/2017. The monitoring of emission reduction and sustainable development indicators has been carried out in accordance to respective registered PDD, Passport and Transition Annex

The electricity generated by the project is exported to the Indian electricity grid. The project activity therefore displaces an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid and thereby reduces the associated CO₂ emissions.

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 on 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	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 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 & Transition Annex, verify that the applied methodology was carried out. Particular attention to the frequency of measurements, the quality of the metering equipment including calibration requirements, and the quality assurance and quality control procedures of the power plant was checked by the assessment team.
- Evaluate the data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.
- Please check reference 4 of this report for detail of the documents checked.

2.3 On site assessment and follow up interviews

As a part of the verification, the on-site inspection has been performed by the assessment team. Details of interviewees, topics covered and additional information presented below:

S. No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Raju	Murali Krishnam	PP representative	20/10/2021	Project implementation, O&M, JMR, Calibration, Sustainable monitoring, LSC etc.etc.	Mr. Pankaj Kumar
2.	Krishna M	Vamsi	Consulatant	20/10/2021	Stakeholder meeting- Employment opportunities, Pollution aspects, Standard of Livings etc.	
3.	Jethwa	Shaliesh	Local Stakeholder	20/10/2021	Stakeholder meeting- Employment opportunities, Pollution aspects, Standard of Livings etc.	
4.	Gada	Mewalal	Local stakeholder	20/10/2021	Stakeholder meeting- Employment opportunities, Pollution aspects, Standard of Livings etc.	

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, 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:

Interview summary of the local stakeholders is also given below:

Name of the stakeholder	Shaliesh Jethwa
Occupation	Villager
DOE QUESTION: Did PP/vendors have employed locals in the operation and maintenance of the project activity? Answer: Yes. PP as well as vendors have given preference to the local peoples residing in the vicinity of the area for various employment. Assessment team noted that locals were employed for the project activity and same is verified from the list of local employees submitted by PP. VVB also during the interviews with site in charge noted that that local people were employed for security and operation related work like vegetation improvement and other unskilled work and operation and electrical work.	

Name of the stakeholder	Mewalal Gada
Occupation	Local stakeholder (villager)
DOE QUESTION: In which area you belong to? Answer: Residing in the village near to the plant substation. VVB questions: In which department you are working? Answer: Working as office staff. VVB question: Did company pays salary regularly? Answer: Yes. PP paying salary regularly.	

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

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

Please refer Appendix 1 of this report. Total numbers of CARs: 03, CLs: 00, 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. Same is verified from validation report and previous verification report.

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, Passport & Transition Annex. The assessment team confirms, through the on site visit that all physical features of the proposed project activity including data collecting systems and storage have been implemented in accordance with the registered PDD & Transition Annex for GS4GG and Passport.

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

- interviews of onsite personnel during onsite visit
- Technical detail analysis of the power plant from the documents submitted by the manufacturer.
- Commissioning certificates of the plant
- PPA for the project activity

Total installed capacity of the plant is 40 MW_{ac} (corresponding to 53.4 MWp). Technical details are as follows:

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	80784	118656
Capacity, MW (DC)	21.408 MWp	32.037 MWp
Total Capacity, MW (DC)	53.445 MWp	
Total Capacity, MW (AC)	40 MW	

Inverters

Make	ABB	Huawei
Model	PVS800-57	SUN2000-43KTL-IN-C1
Rated Capacity	1000 kVA	43 kVA
No. of Inverters	36	94
Rated Input Voltage	1000 V DC	1000 V DC

Transformers

Make	Raychem RPG	Raychem RPG	Crompton Greaves	Recons Power Equipments
Model No.	ADA1419025	ADA1419026	MT 7984	
Capacity	4000 kVA	4000 kVA	20/25 MVA	100 kVA
No. of Transformers	09	01	02	01
Voltage Ratio	4 x 380 V/ 11 kV	2 x 500 V/ 11 kV	11 / 66 kV	415 V / 11 kV

Power plant is commissioned on 04/08/2017. Assessment team checked the commissioning date of the project activity from the Commissioning certificate issued by the government authority i.e. Gujarat Energy Development Agency (GEDA) and found the same to be appropriate.

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

The verification team has reviewed the commissioning certificates & PPA to conclude that the capacity of the project is same as mentioned in the registered GS PDD and explained by PP during interviews. The capacity of the project activity does not change after the registration of the project activity and same have been confirmed from the commission certificate, PPA and JMRs issued by State Utility and Invoices raised by the PP towards SECIL.

Also from review of other documents such as Commissioning certificate, PPA & JMR, it was observed that the rated capacity of the project is 40 MW. The capacity of the project is more than 15 MW and thus the same qualifies as large-scale project activity.

Plant is located in Charanka, Santalpur, District Patan, Gujarat, India. Assessment team also checked the locations of the project activity in the registered PDD/passport & Transition Annex, validation report and previous verification monitoring report & verification report. Thus, location provided in MR are found in line with registered documents of the project activity and are as 23° 54' 26.45" N & 71° 12' 4.79" E.

The project is connected to National grid (as per the grid structure of India) and the same is found correct by the assessment team during the review of commissioning certificate, PPA and interviews with PP. The grid structure as mentioned in the PDD & Transition Annex is still applicable for the project and ex-ante emission factor as proposed in the PDD & Transition Annex is used for emission reduction calculation. Assessment team noted that the project activity has entered a power purchase agreement for a period of 25 years with the SECIL. The electricity is fed in the Integrated Indian grid.

The commissioning details as provided in the MR Version 01 & 02 were checked with the commissioning certificates issued by State Utility. The commission certificate is issued by "Government agencies" which is a third-party government firm and thus the commissioning dates are acceptable to the assessment team.

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

The amount of GS-VERs achieved during the present monitoring period is lower than the estimated value in the PDD & Transition Annex. This is due to the lower PLF months during the monitoring period. There is no any adverse impact on additionality due to this low PLF of project activity for current monitoring period.

Compliance of the Monitoring Plan with the Monitoring Methodology:

The verification team is able to confirm that the monitoring plan is in accordance with the approved methodology ACM0002 version 17.0, applied by the proposed GS project activity.

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

Assessment team also checked the metering details of the connected solar plant and found the same to be appropriate. Feeder details were confirmed from the interviews with PP, Previous verification report and JMRs submitted for current monitoring period. The monitoring meters are installed at GETCO substation.

Materiality adopted in Verification:

Consideration of materiality in planning the verification

No.	Risk that would lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk levels	Justification	
1	Human errors: Readings from Meters (if not automatic)	LOW	Human error is likely to occur if the monitoring personnel are not trained well or inexperienced in data recording procedures and monitoring processes.	All the personal are well trained to monitor and collect data and thus risk associated with Human error is minimized. Assessment team checked the training records to confirm that all the personal are well trained to handle the activities related to monitoring. Assessment team checked the training records for the complete monitoring period and confirm that the personal are well trained to monitor and collect data for the project activity.
2	Human error: Quantification of emission reduction	LOW	Use of spread sheets without adequate data control, changes/updates, version tracking, traceability and security	All the energy statement i.e., JMR sheets and the invoices for the complete monitoring period are checked and thus the assessment team confirms that the ER value is conservative and correct.

Consideration of materiality in conducting the verification

In line with Guidelines for Application of materiality in verifications, the verification team has conducted a complete verification of all the information presented in the monitoring report and data monitored as presented in the emission reduction calculation spread sheet. It invoices

follows the paper trail back to the raw data such as meter reading records and invoices. There are no material errors, overestimation of ER, omission or misstatement.

3.3 Compliance of the Monitoring Plan with the Monitoring Methodology

The verification team is able to confirm that the monitoring plan is in accordance with the approved methodology ACM0002 Version 17.0, applied by the proposed GS project activity.

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

3.4 Completeness of Monitoring

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

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. Assessment team checked the values, source of data, choice of data, purpose of the data mentioned in the MR from the registered PDD & Transition Annex and confirms that the similar approach was considered for the current monitoring period also.

The value for $EF_{grid,OM,y}$, $EF_{grid,BM,y}$, $EF_{grid,CM,y}$, was considered from the CO2 baseline database published by Central Electricity Authority (CEA) version 11.0. The default values as mentioned in the registered PDD & Transition Annex and submitted 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 & Transition Annex for the current monitoring period.

The ex-ante fixed value as per registered PDD v& Transition Annex is as below. The same values are used for the current monitoring period for the calculation of baseline emission.

$$EF_{OM,y} = 0.9941 \text{ tCO}_2\text{e/MWh}$$

$$EF_{BM,y} = 0.9285 \text{ tCO}_2\text{e/MWh}$$

$$EF_{CM,y} = 0.9777 \text{ tCO}_2\text{e/MWh}$$

b. Data and parameters monitored

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

Relevant SDG indicators = 7.2.1 Affordable and Clean Energy

$EG_{facility,y}$ = Quantity of net electricity supplied by the project plant to the grid (MWh)

The parameter $EG_{facility,y}$ is calculated using the difference of export and import value measured from the electricity meter. Net electricity supplied to the grid for individual project activity is then calculated as export-import. The Meter Reading Statement (i.e. JMR sheets) issued by

State board which provide the values of export and import for the month. The same is thus used for emission reduction calculation. The total energy exported/imported to/from the grid by project is measured by State electricity board via (electronic tri-vector main meter which measures both export & import concurrently) connected to the solar plant. For billing purpose, the meter readings shall be measured on monthly basis jointly by the representative of State electricity board and the Project Participant & online mode and the PP has no control over the process. On the basis of this reading, Quantity of net electricity supplied to the grid shall be calculated and the statement shall be issued to Project Participant. Based on the statement the Invoice is raised by PP to State electricity board. The practice followed onsite is as per the registered PDD and registered Passport/Transition Annex. The meter reading is taken during a fixed billing cycle of every month and representative of state electricity board and Operation and maintenance personal onsite present during the process. The export and import reading is continuous and recording frequency is monthly. The QA/QC procedure is as per the requirement of the registered PDD, Passport & Transition Annex and onsite practice. Assessment team confirms the same during the site visit interviews with PP. Assessment team checked all the values of calculated Net electricity supplied to the grid from the Meter reading statement (provides the value of export and import) issued by State electricity board. Moreover, as per the requirement of the approved methodology and registered PDD and passport/Transition Annex assessment team cross checked the net electricity value as presented in the JMR with the invoice raised and found the values match with each other. The same is thus acceptable to the assessment team and thus emission reduction calculation is correct.

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 metering arrangement is tri-vector bi-directional energy meters (main and check) at the substation. These meters record several parameters including electricity exported & imported. These electricity meters are being used by state officials to obtain the value of export and import and hence Net electricity supplied is calculated based on these values.

The calibration details such as make, accuracy class serial number is as per the meter available were checked during verification review from calibration certificates and interviews with PP & photographs submitted by PP.

The calibration details are as below:

As per the registered PDD & Transition Annex, calibration of meters is under the control of State Utility and frequency of calibration is not within the control of PP. However, as the PDD & Transition Annex the PP shall ensure at least once in five-year calibration as per the national standard. During the monitoring period the meters have been calibrated and there has been no error or fault in the meters identified during the latest calibration as well.

All the meters are of "Secure Make with 0.2s Accuracy class. Below are the details of meter numbers and calibration dates, the meters are calibrated during the monitoring period have been detailed below:

Details	Main meter	Check meter
Meter Number	GJ3845A	GJ3846A
Make	Secure	Secure
Accuracy class	0.2S	0.2S
Location	Substation	Substation
Last calibration	30/08/2017	06/10/2017
Validity	29/08/2022	05/10/2022
Calibration Compliance	Yes	Yes

The Calibration details are presented in section D.2 of the MR. Calibration Agency for all the meters is State electricity board (= Meter and testing division of SEB). As per the PPA, the calibration dates and frequency are under the control of State electricity board (= Meter and testing division of SEB).

The calibration is done by State nodal agency (Meter Testing division), which is accredited Laboratory from National Accreditation Board for Testing and Calibration, Govt. of India (<http://www.nabl-india.org/>) to carry out calibration.

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

In the Registered PDD Version 04 dated 19/04/2018 & Transition Annex indicators are chosen for the monitoring of sustainable monitoring:

Meth/tool	Relevant indicator	SDG	GS PDD	MR	Compliance
Net electricity supplied to the grid	SDG 7.2: By 2030, increase substantially the share of renewable energy in the global energy mix		Quantity of net electricity supplied to the grid during the year y.	Quantity of net electricity supplied to the grid during the year y.	Yes
Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	SDG 8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value		Quantitative employment, income generation and trainings provided to employees & O&M staff for this monitoring period	Quantitative employment, income generation and trainings provided to employees & O&M staff for this monitoring period	Yes
Take urgent action to combat climate change and its impacts	SDG 13: Take urgent action to combat climate change and its impacts		Emissions Reductions in tCO ₂	Emissions Reductions in tCO ₂	Yes

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

Relevant SDG Indicator	SDG 7.2.1: Affordable and Clean Energy
Data/parameter:	EG _{facility,y}
Unit	MWh
Description	Quantity of net electricity supplied by the project plant to the grid
Source of data checked by the assessment team	Monthly generation statement/JMR provided by State Utility
Value(s) of monitored parameter	72,307
Means of verification:	Assessment team checked that the parameter is calculated. Energy meters of 0.2s accuracy class provided at substation & continuously measure the export as well as the import from the solar plant. The net electricity exported is being calculated by subtracting import from the export. For billing purpose, the meter readings shall be measured on monthly basis jointly by the representative of State electricity board and the Project Participant & online and the PP has no control over the process. On the basis of this reading, Quantity of net electricity supplied to the grid is calculated and the JMR/State Energy Account issued by State Utility to Project Participant. Based on the JMR/State Energy Account the Invoice is raised by PP to State electricity board. The practice followed onsite is as per the registered PDD & Transition Annex. The meter reading is taken during a fixed billing cycle of every month. The details of the Meters are provided in appendix 2 of the report.
Cross check mechanism	The JMR is cross-checked with the invoice copies. Emission reduction calculated in thus correct and accurate. The cross-check mechanism is presented in the emission reduction calculation sheet and the same is found correct.

Relevant SDG Indicator	SDG 13.2.1: Climate Action
Data/parameter:	Emissions Reductions in tCO ₂
Unit	tCO ₂
Description	CO ₂ emission reduction
Source of data checked by the assessment team	Emission reduction sheet
Value(s) of monitored parameter	70,694
Means of verification:	Assessment team checked that the parameter is calculated. The electricity exported & imported measured by Energy meter installed at substation. The JMR is cross-checked with the invoice copies. Emission reduction calculated in thus correct and accurate.
Cross check mechanism	All the formulas are applied in line with the registered CDM PDD/GS Passport & Transition Annex.

Relevant SDG Indicator	SDG 8.5.1: Decent Work and Economic Growth
Data/parameter:	Quality of employment
Unit	Number of Trainings provided to employees

Description	Trainings provided to employees
Source of data checked by the assessment team	Training Records, HSE & HR records
Value(s) of monitored parameter	Assessment team checked Number of Trainings provided to employees & O&M staffs. A total of 12 training programmes to its employees and O&M staffs. The training records for the monitoring period is checked by the assessment team and found correct.
Means of verification:	The value for this parameter is taken from Plant records / Letter from O&M contractors for employment generation. Verification team interviewed some employees & local stakeholders.
Cross check mechanism	Not applicable

Relevant SDG Indicator	SDG 8.5.1: Decent Work and Economic Growth					
Data/parameter:	Quantitative employment and income generation					
Unit	Number of staffs involved in the project					
Description	Number of people employed directly due to the project activity					
Source of data checked by the assessment team	Plant employment records, HR and PP declaration					
Value(s) of monitored parameter	Assessment team checked that for Quantity of employment and income generation. Employment is given in office work, O&M, Security etc. A total of 32 employments given during monitoring period. The employment records for the monitoring period are checked by the assessment team and found correct. Further below is the breakup of employment generated during the monitoring period <table><tr><td>Skilled</td><td>Unskilled</td></tr><tr><td>17</td><td>15</td></tr></table>		Skilled	Unskilled	17	15
Skilled	Unskilled					
17	15					
Means of verification:	The value for this parameter is taken from Plant employment records, HR and PP declaration. Verification team interviewed some employees and Local stakeholders.					
Cross check mechanism	Not applicable					

During the interviews with PP, the verification team confirmed that there is a grievance book at project site. Every stakeholder has access to the grievance register and can lodge grievance any time. Same if any is resolved as per the standard operating procedures of the company. By checking grievance book submitted by PP, it was able to confirm there are no comments received from the local people for the present monitoring period. Local people are happy with the implementation of the project activity as it entrusts employment and improve living standard of local people and villagers.

Assessment team also checked that the projects are not registered under the 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.

Assessment team also checked the other registry like UNFCCC and VCS and found that project is registered to UN. Thus, double counting avoidance undertaking for the current monitoring period is submitted by PP.

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 on site visit audit Mr. Vamsi krishna, 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.

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.

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

Item	Baseline estimate	Project estimate	Net benefit
SDG 7: Affordable and Clean Energy	-	72,307 MWh	72,307 MWh
SDG 8: Decent Work and Economic Growth	-	No. of employment opportunities created: 32 No. of trainings conducted: 12 INR: 53 Lakh	No. of employment opportunities created: 32 No. of trainings conducted: 12 INR: 53 Lakh
SDG 13: Climate Action	70,694 tCO ₂ e	-	70,694 tCO ₂ e

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	72,390 MWh for the Monitoring Period	72,307 MWh
SDG 8: Decent Work and Economic Growth	01 Training	No. of employment opportunities created: 32 No. of trainings conducted: 12 Cost spent on O&M: 53 Lakh INR
SDG 13: Climate Action	70,775 tCO ₂ e	70,694 tCO ₂ e

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 spread-sheets and are consistent with the applied methodology ACM0002 Version 17.0 and the monitoring plan contained in the registered PDD & Transition Annex. 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 01 & Monitoring report Version 02 and corresponding ER calculation spread-sheets. The verification process for the same has been clearly described in above section of the report. See below for the detailed data:

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

The baseline emission is calculated in line with para 44 of ACM0002, Version 17, using equation below:

$$BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$$

Where,

BE_y = Baseline emissions in year y (tCO₂/yr)

$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr).

$EF_{grid,CM,y}$ = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (tCO₂/MWh)

AS per para 46 of ACM0002, version 17, 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)

$EF_{grid,CM,y}$ = Baseline Emission factor
 = 0.9777 tCO₂/MWh

$$BE_y = 72,307 \times 0.9777 = 70,694 \text{ tCO}_2\text{e (round down figure)}$$

Thus, the baseline value of each SDG outcome is summarised as follows;

Item	Baseline value
SDG 7: Affordable and Clean Energy	No Activities in the baseline

SDG 8: Decent Work and Economic Growth	No Activities in the baseline
SDG 13: Climate Action	Emission of 70,694 tCO _{2e}

Project emissions:

The project is a solar power project, no fossil fuel is be consumed according to the methodology ACM0002 Version 17.0 & according to registered PDD, $PE_y = 0 \text{ tCO}_2e$

Leakage:

As per ACM0002 Version 17.0, No leakage emission needs to be considered.

Emission reductions:

Thus, the emission reductions are:

$$ER_y = BE_y - PE_y$$

$$= 70,694 - 0 = 70,694 \text{ tCO}_2e$$

The actual achieved emission reduction for this monitoring period is 0.11% lower than estimated value in the GS PDD (70,694 tCO_{2e} against estimated 70,775 tCO_{2e} for 306 operational days with 84,421 tCO_{2e}/annum). The reductions in actual emission reduction are justified, since during the current monitoring period, the plant underwent scheduled maintenance and breakdown. Also being a solar power project, the generation is nature dependent.

3.7 Management and Operational System

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

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

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

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

4. REFERENCE

LIST OF DOCUMENTS	
S. No.	Document/Evidence/Reference/Web link, Version, Date
1.	Monitoring Report Version 01 dated 20/05/2021, Monitoring report version 02 dated 20/10/2021 Monitoring report version 02.1 dated 06/01/2021
2.	ER sheets version 01 dated 20/05/2021 ER Sheets version 02 dated 20/10/2021
3.	Registered PDD Version 04 dated 19/04/2018, Transition Annex for the project activity Final Passport, Version 04 dated 18/04/2018 Final GS Validation report version 01 dated 20/04/2018 Final MR for 2 nd Verification version 02 dated 15/06/2020 Final Verification Report for 2 nd Verification version 01 dated 18/06/2020
4.	ACM0002 Version 17.0 Tool to calculate the emission factor for an electricity system", Version 6.0.0
5.	CDM validation and verification standard for project activities, Version 03.0
6.	GS4GG guideline
7.	Training records of the employees (both skilled/non-skilled)
8.	O&M policy
9.	Monthly reports issued by state utility and invoices raised by PP for the complete monitoring period
10.	Calibration certificates of the complete monitoring period
11.	Commissioning certificates for power plant
12.	Log book records for scheduled maintenance of the power plant for the complete monitoring period
13.	Sample work contract for both skilled and non-skilled manpower
14.	CSR report
15.	Grievance register
16.	HSE procedures
17.	Power purchase agreement
18.	O&M agreement
19.	Technical manual from the Manufacturer
20.	Declaration for no double counting of the emission reductions
21.	ERPA dated 16/03/2020 signed for the purchase of the credits from the project activity
22.	On site visit supporting documents

LIST OF DOCUMENTS	
S. No.	Document/Evidence/Reference/Web link, Version, Date
23.	Various Circulars for Covid-19 issued by Ministry of Home Affairs of Government of India time to time https://www.mha.gov.in/notifications/circulars-covid-19

5. FINAL VERIFICATION STATEMENT

Applus+ Certification has been engaged by Orange Charanka Solar Energy Private Limited to perform the 3rd periodical verification of the "40 MW Orange Charanka Solar Power Project in Gujarat, India" (GS Ref. No. GS5866).

The management of Orange Charanka Solar Energy Private 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. A reasonable level of assurance has been achieved during this verification. The verification can confirm that:

- the project is operated as planned and described in the project design document and PDD approved by the EB and GS;
- 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 the EB and GS;
- 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 "40 MW Orange Charanka Solar Power Project in Gujarat, India" for the monitoring period 01/03/2020 to 31/12/2020 (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: 01/03/2020 to 31/12/2020 (Both days included)

Verified emissions in the above reporting period:

Leakage emissions	0 tCO ₂ e equivalents
Project emissions	0 tCO ₂ e equivalents
Baseline emissions	70,694 tCO ₂ e equivalents
Emission reductions	70,694 tCO ₂ e equivalents

Vintage wise breakup of verified emission reduction is given below:

Vintage	Period	Emission Reduction Achieved (tCO ₂ e)
Year 2020	01/03/2020 to 31/12/2020	70,694
Total	01/03/2020 to 31/12/2020	70,694

Date: 07/01/2021

Lead Auditor: Mr. Pankaj Kumar

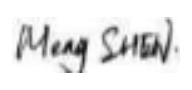
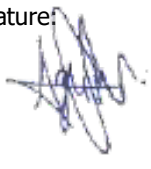
Tech. Expert: Mr. Pankaj Kumar

Auditor: NA

Tech. Reviewer: Mr. Simon Shen

Approver (*Applus+ Certification Business Unit Managing Director*)

Mr. Agustín Calle de Miguel

ASSESSMENT TEAM	
Team Leader Mr. Pankaj Kumar	Technical Reviewer: Mr. Simon Shen
Signature: 	Signature: 
Approver: Mr. Agustín Calle de Miguel	
Signature: 	

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

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	01
Raised by:	Mr. Pankaj kumar	Ref. to checklist in above tables:	C, E.2
Description of the audit finding		Date:	18/10/2021
1. In sec. C, PD is requested to revise the emission reductions as GS VER instead of CER in the MR. 2. In sec. E.2, value of SDG goal 13 seems to be inconsistent with the ER sheet.			
Project Participant's response		Date:	20/10/2021
1. The reference to the CER is now corrected to GS VER in section C of MR 2. In section E.2, the SDG 13 value is now corrected as per ER sheet			
Documentation provided as evidence by Project Participant			
Revised MR Version 2.0			
Auditor's assessment comment		Date:	20/10/2021
1. PP has revised throughout MR and replaced GS CER with GS VER as required. Thus, accepted and CAR closed. 2. Parameter value of SDG 13 in section E.2 is now rectified and found consistent with the ER sheet thus accepted and CAR is closed.			

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	02
Raised by:	Mr. Pankaj Kumar	Ref. to checklist in above tables:	
Description of the audit finding		Date:	18/10/2021
PP shall provide JMRs/ Invoices for entire monitoring period along with calibration certificates of energy meters for SDG 7 PP shall also provide a breakup of employees as number of locals, skilled and unskilled etc. for SDG 8 impacts for this monitoring period.			
Project Participant's response		Date:	20/10/2021
The JMRs/ Invoices for entire monitoring period along with calibration certificates of energy meters for SDG 7 are now provided The breakup of employees as number of skilled and unskilled are provided for SDG 8 impacts for this monitoring period.			
Documentation provided as evidence by Project Participant			
Revised MR JMR and invoice Calibration certificate			
Auditor's assessment comment		Date:	20/10/2021

PP have submitted the copies of JMRs and invoice relevant to current monitoring period. Breakup of the employees have been also submitted. All supporting found consistent with the revised MR. CAR closed.

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	03
Raised by:	Mr. Pankaj Kumar	Ref. to checklist in above tables:	
Description of the audit finding	Date: 18/10/2021		
PP shall provide scanned copy of grievance register.			
Project Participant's response	Date: 20/10/2021		
Scanned copy of grievance register is submitted			
Documentation provided as evidence by Project Participant			
Grievance Register			
Auditor's assessment comment	Date: 20/10/2021		
Grievance register is submitted to the assessment team and it was found that no grievance was received during monitoring period related to project activity. CAR thus closed.			

Appendix 2: Calibration details of monitoring meters

The calibration details of Main and Check Meter at Delivery Point is as below:

Details	Main meter	Check meter
Meter Number	GJ3845A	GJ3846A
Make	Secure	Secure
Accuracy class	0.2S	0.2S
Location	Substation	Substation
Last calibration	30/08/2017	06/10/2017
Validity	29/08/2022	05/10/2022
Calibration Compliance	Yes	Yes

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 Team Leader, 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, 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..
Mr. Simon Shen	Mr. Simon Shen (Master Degree in Thermal Energy Engineering, Bachelor Degree in Environmental 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 environmental protection field. Before he joined Applus+ LGAI, he had been worked for TÜV SÜD as a GHG Validator/Assessment team and ISO 9001/14001 Lead Auditor for 3.5 years