

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



Project Title:	100 MW Solar Power plant in Maharashtra
Monitoring Period:	01/07/2022 - 31/12/2022 (Both days included)
GS project ID:	GS7533
Internal ID:	7023
Customer:	Juniper Green Energy Pvt Ltd
Date:	27/11/2023
Revision:	06

SUMMARY			
Reference No.	Date (first version)	Version No.	Date (last version)
A+SH_SYST_TQC_GS_VER_7023	10/05/2023	06	27/11/2023
GS4GG Verification			
GS4GG Certified Product (sought):		GS VER	
GS4GG SDG Impact Statement (sought):		Impact Certification	
General Information			
Client	Juniper Green Energy Pvt Ltd		
Project Title	100 MW Solar Power plant in Maharashtra		
Project Participants	Juniper Green Energy Pvt Ltd.		
Project Location	Nashik, Jalgaon & Dhule districts in Maharashtra state of India.		
Contact Person	Mr. Sudesh Pradhan		
Monitoring Period:	01/07/2022 - 31/12/2022 (Both days included)		
GS4GG Version: GS4GG Principles and Requirements 1.2 GS4GG Activity Requirements: RE Activity Requirements, version 1.4 Applied Methodology Version: ACM0002 "Grid-connected electricity generation from renewable sources" Version 19.0		GS4GG Sectoral Scope: 2 UNFCCC CDM Sectoral Scope: 1 Technical Area: 1.2	
Monitoring Report Version: 01 Date: 02/03/2023		Final Monitoring Report Version: 07 Date: 25/11/2023	
Certified Project Design Document Version: Assessment team checked the registered GS PDD version 05 Date: 04/08/2020			
Estimated values for all SDG:			
SDG	SDG	Values	
7	Renewable Electricity Generated	239,771 MWh electricity generation (annual) 120,871 MWh electricity generation (Current M.P.)	
8	Trainings provided to O&M staff	01 Trainings provided to O&M Staff (annual)	
8	Number of Jobs generated	67 employments (annual)	
13	Emission Reduction	224,617 tCO ₂ e (annual) 113,232 tCO ₂ e (Current M.P.)	
Actual values for the Monitoring period for all SDG:			
SDG	SDG	Actual values for this monitoring period	
7	Renewable Electricity Generated	98,928.46 MWh electricity generation	
8	Trainings provided to O&M staff	55 Trainings provided to O&M Staff	
8	Number of Jobs generated	4 employments created , 1,064,000 INR	
13	Emission Reduction	92,676 tCO ₂ e emission reduction	
Selected Sustainable Development Goals (SDGs): 7; 8; 13			
Verification Summary			

SUMMARY

LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by Juniper Green Energy Pvt Ltd to perform the 5th verification of “100 MW Solar Power plant in Maharashtra” (Ref. No. GS7533) applying the methodology ACM0002 Version 19.0^{4/}.

The management of Juniper Green Energy Pvt Ltd is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions.

A desk review and a site visit has 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;
- 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.

Juniper Green Energy Pvt Ltd is the promoter of the project activity and involves installation of 100 MW grid connected solar photovoltaic power plant in Nashik, Jalgaon & Dhule districts in Maharashtra state of India. Electricity generated from the project activity is sent to Indian grid. As per GS4GG PDD^{3/}, the project replaces anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 224,617 tco₂e per annum, & 113,232 tco₂e for current monitoring period thereon displacing 239,771 MWh/year & 120,871 MWh/Current M.P. amount of electricity from the generation-mix of power plants connected to the Indian electricity grid, which is mainly dominated by thermal/ fossil fuel-based power plant. The project activity was commissioned in two phases, Detail are as follows: -

Project Investor	Project Capacity	Date of Commissioning	Village/Taluka	District	State	Usage
Nisagra Renewable Energy Pvt. Ltd.	10 MW	31/12/2019	Indave, Sindhkheda	Dhule	Maharashtra	Sale to State Discom
	10 MW	30/12/2019	Varul, Shirpur	Dhule		
	10 MW	07/01/2020	Chhail, Sakri	Dhule		
	10 MW	29/03/2020	Mukti	Dhule		
	10 MW	08/01/2020	Bahirane, Baglan (Satana)	Nashik		
	10 MW	16/01/2020	Dahidi, Malegaon	Nashik		
	10 MW	07/03/2020	Vichkheda, Parola	Jalgaon		
Juniper Green Energy Pvt. Ltd.	10 MW	22/01/2020	Vahelgaon, Nandgaon	Nashik		
	10 MW	23/01/2020	Rajapur, Yeola	Nashik		
	10 MW	21/03/2020	Dahiwad, Deola	Nashik		

The monitoring of emission reduction and sustainable development indicators has been carried out in accordance to respective registered PDD^{3/}.

Applus+ Certification confirms that the project is implemented in accordance with the validated and registered PDD^{3/}. The monitoring plan complies with the applied methodology ACM0002 Version 19.0^{4/} 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

SUMMARY

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 92,676 tCO₂e emission reductions during period 01/07/2022 - 31/12/2022 (Both days included)

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: 01, CLs: 06, FARs: 01 (Raised by Sustain Cert during Performance Review).

ASSESSMENT TEAM

Team Members	Type of Resource ¹	Organization (for OEs)
Lead Auditor: Dr. Atul Takarkhede	☐ IR ☐ EI ☒ OE	M/s True Quality Certifications Private Limited
Technical Expert: Dr. Atul Takarkhede	☐ IR ☐ EI ☒ OE	M/s True Quality Certifications Private Limited
Technical Reviewer: Mr. Denny Xue	☐ IR ☒ EI ☐ OE	Applus+ Certification

Note: In line with the GS Rule Update RU 2020 PR – PR V2 dated on 04/08/2020, the VVB hereby discloses that the VVB has performed Validation of this project with different team members (Lead Auditor: Mr. Pankaj Kumar, Auditor: Mr. Sukanta Das) than in this verification.

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

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
CER	Certified Emission Reduction
CL / CR	Clarification Request
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
DNA	Designated National Authority
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
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

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1. INTRODUCTION

1.1 Objective

LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by Juniper Green Energy Pvt Ltd to perform the 5th verification of “100 MW Solar Power plant in Maharashtra” applying the methodology ACM0002 Version 19.0^{/4/} 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 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^{/5/} 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 19.0^{/4/}.

1.2 Scope

The verification scope encompasses an independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the VVB. The verification is based on the submitted monitoring report, registered PDD 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

Juniper Green Energy Pvt Ltd & Nisagra Renewable Energy Private Limited are the promoter of the project activity and involves installation of installation of 100 MW solar power project in various villages of Nashik, Jalgaon & Dhule districts in Maharashtra state of India. The total capacity of the project activity is 100 MW, which consist 7*10 MW unit by Nisagra Renewable Energy Pvt. Ltd. & 3*10 MW, by Juniper Green Energy Pvt. Ltd. Electricity generated from the project activity is sent to Indian grid of India. Same was verified during the site visit. As per GS4GG PDD^{3/}, the project will replace anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 224,617 tCO_{2e} per annum & 113,232 tCO_{2e} for the current M.P., thereon displacing 239,771 MWh/year & 120,871 MWh for the current M.P. amount of electricity from the generation-mix of power plants connected to the Indian electricity grid, which is mainly dominated by thermal/ fossil fuel-based power plant. The project activity is commissioned in the year 31/12/2019.

The details of the project are mentioned in the table:

Project Investors' Name	Capacity in MW	Village	District	Latitude	Longitude
Nisagra Renewable Energy Pvt. Ltd.	10 MW	Indave, Sindhkheda	Dhule	21° 14'09.6"N	74° 26' 24.0"E
	10 MW	Varul, Shirpur	Dhule	21° 24' 46.8"N	74° 45'28.8"E
	10 MW	Chhail, Sakri	Dhule	20° 55' 26.4"N	74° 16'40.8"E
	10 MW	Mukti	Dhule	20° 52' 41.7"N	74° 57'40.896"E
	10 MW	Bahirane, Baglan (Satana)	Nashik	20° 47' 31.2"N	74° 21' 10.8"E
Juniper Green Energy Pvt. Ltd.	10 MW	Rajapur, Yeola	Nashik	20° 10' 48.0"N	74° 37'12.0"E
	10 MW	Vahelgaon, Nandgaon	Nashik	20° 25' 55.2"N	74° 45' 50.0"E
Nisagra Renewable Energy Pvt. Ltd.	10 MW	Vichkheda, Parola	Jalgaon	20° 52' 31.548"N	75° 4' 6.96"E
	10 MW	Dahidi, Malegaon	Nashik	20° 43' 12.0" N	74°35'24.0"E
Juniper Green Energy Pvt. Ltd.	10 MW	Dahiwad, Deola	Nashik	20° 25' 54.912"N	74° 15'25.668"E

The monitoring of emission reduction and sustainable development indicators has been carried out in accordance to respective registered PDD.

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
Dr. Atul Takarkhede	LA/TE	YES	YES	NA	YES
Mr. Denny Xue	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^{1/} was submitted to VVB before the verification activities started. The MR was assessed based on all the relevant documents. The aim of the assessment in the desk review was to:

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

2.3 On site assessment and follow up interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1	Pradhan	Mr. Sudesh	PP representative	19/03/2023, 20/03/2023 22/03/2023	Project implementation,	Dr. Atul Takarkhede
2	R.	Mr. Aravamudan	Manager (O&M)		Project implementation, Grievance mechanism etc.	
3	Rathod	Mr. Krishana Chandra	Plant Head (100 MW MH)		Baseline emissions, ER calculations, Sustainable monitoring,	
4	Mishra	Ms. Dhriti	Asst. Manager, Infinite Solutions		Stakeholder meeting- Employment opportunities,	

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
5	Patil	Mr. Vishnu	Local stakeholder (MH)		Standard of Livings etc.	
6	Jadhav	Mr. Subhash	Local stakeholder (MH)			

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, 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 PDD
- To understand grievance (if any) from the villagers during the monitoring period.
- Local stakeholder meeting details:

Name of the stakeholder	Vishnu Patil
Occupation	Villager (Varul, Shirpur)
VVB QUESTION: Did PP provided employment opportunity to locals? Answer: Yes, employment is generated and the locals are given priority. Assessment team noted that locals were employed for the project activity for the current monitoring period. VVB also like to conclude that during the site visit it was observed that local people were employed for security and operation related work like vegetation improvement and other unskilled work. VVB also found that skilled local persons were also employed by the organization for the operation and maintenance of the power plant.	

Name of the stakeholder	Subhash Jadhav
Occupation	Villager (Dahiwad)

VVB questions: Did the power plant have any harmful impact on farming or vegetations?

Answer: NO. The plant is implemented in barren land and there were no any fertile land or crop which is damaged.

Name of the stakeholder	Mr. Gajanan Pawar
Occupation	Villager (Dahidi, Malegaon)
VVB QUESTION: Do you have any other feedback or suggestions you would like to provide regarding the project? Answer: No, Project generate lot of employment opportunity, increases social and environmental impact. VVB also like to conclude that during the site visit it was observed that local people were employed for security and operation related work like vegetation improvement and other unskilled work. VVB also found that skilled local persons were also employed by the organization for the operation and maintenance of the power plant.	

Name of the stakeholder	Mr. Jagdish Kale
Occupation	Villager (Vahelgaon, Nandgaon)
VVB QUESTION: What impact do you think the project has had on the village? Answer: Employment is generated and the locals are given priority. Assessment team noted that locals were employed for the project activity for the current monitoring period. VVB also like to conclude that during the site visit it was observed that local people were employed for security and operation related work like vegetation improvement and other unskilled work. VVB also found that skilled local persons were also employed by the organization for the operation and maintenance of the power plant.	

Name of the stakeholder	Mr. Arjun Jadhav
Occupation	Villager, (Chhail, Sakri)
VVB QUESTION: Are you satisfied with the way the project was implemented into the village? Answer: Yes, We all are satisfied with the way the project was implemented into the village. VVB also like to verify about reality check of satisfaction due to project activity into the village through conversation.	

Name of the stakeholder	Mr. Praveen Mane
Occupation	Villager, (Bahirane)

VVB QUESTION: Have you seen any changes in the economic or social aspects of the village since the project was implemented?

Answer: Yes, employment is generated and the locals are given priority. Assessment team noted that locals were employed for the project activity for the current monitoring period.

VVB also like to conclude that during the site visit it was observed that local people were employed for security and operation related work like vegetation improvement and other unskilled work. VVB also found that skilled local persons were also employed by the organization for the operation and maintenance of the power plant.

Name of the stakeholder	Mr. Ganesh Mali
Occupation	Villager, (Indave, Sindhkhedha)
VVB QUESTION: Are you satisfied with the way the project was implemented into the village? Answer: Yes, We all are satisfied with the way the project was implemented into the village. VVB also like to verify about reality check of satisfaction due to project activity into the village through conversation.	

Name of the stakeholder	Mr. Sadashiv Chauvan
Occupation	Villager, (Rajapur)
VVB QUESTION: Are you satisfied with the way the project was implemented into the village? Answer: Yes, We all are satisfied with the way the project was implemented into the village. VVB also like to verify about reality check of satisfaction due to project activity into the village through conversation.	

Name of the stakeholder	Mr. Sagar Mohita
Occupation	Security guard
VVB QUESTION: Are you satisfied with the amount of salary is provided by project activity. Answer: Yes, decent amount of salary is provided by the project developer. VVB also like to verify about reality check of satisfaction due to project activity.	

Name of the stakeholder	Mr. Tukaram
Occupation	Office assistance
VVB QUESTION: Are you satisfied with the amount of salary is provided by project activity. Answer: Yes, decent amount of salary is provided by the project developer as per local labour payment. VVB also like to verify about reality check of satisfaction due to project activity.	

Name of the stakeholder	Mr. Rajesh Kumar
Occupation	Office assistance
VVB Question: Any kind of hazardous and non-hazardous waste generated by the plant. Answer: No, since it's a solar power plant, there was no hazardous waste generated by the power plant, VVB like to conform that, same is found during the site visit.	

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 07^{1/}. 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: 01, CLs: 06, FARs: 01 (Raised by Sustain Cert during previous performance review).

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 5th verification for the project activity and 01 FARs were raised by Sustain Cert during previous performance review report. No FAR pending from the validation and previous verification of the project activity. Refer Appendix 1 of this report for details of FARs raised performance review of previous verification/s.

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 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 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 Site 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

Juniper Green Energy Pvt Ltd & Nisagra Renewable Energy Pvt Ltd has installed solar power project at Dhule, Nashik, Jalgaon, District of Maharashtra State of India with capacity of 100 MW. The details of the total capacity commissioned is as below:

Sr.No	Village	Number of Modules installed of each type
Juniper Green Energy Pvt. Ltd.		
1.	Dahiwad	325 Wp/330 Wp/375 Wp Total: 44,313
2.	Yeola, Rajapur	325/330 Wp Total 44100
3.	Vahelgaon	325/330 Wp Total 44064 Nos.
Nisagra Renewable Energy Pvt Ltd.		
4.	Indave	325 Wp/330 Wp Total: 44232
5.	Kasare	325 Wp/330 Wp Total: 44,232 Nos
6.	Mukti	325 Wp/330 Wp Total: 44,400 Nos
7.	Parola	325 Wp/330 Wp Total: 43,584 Nos
8.	Tembhe, Malegaon	325 & 330 Wp Total: 44232 Nos
9.	Tingri	325 & 330 Wp Total: 44232 Nos
10.	Varul	325 Wp/330 Wp Total: 44064 Nos

- Technical specification at the time of commissioning:
- **A. Solar PV Module:**

Module Make	Trina Solar
Module Model	Poly C-Si
Technology Used	Multi Crystalline
Capacity (p)	330Wp, 325 Wp
Switchgear Panel	
Make	Technocraft
Capacity	11 kV

B. Number of Modules installed:

Sr. No	Village	Number of Modules installed of each type
Juniper Green Energy Pvt. Ltd.		
1	Dahiwad	325 Wp/330 Wp/375 Wp Total: 44,313
2	Yeola, Rajapur	325/330 Wp Total 44100
3	Vahelgaon	325/330 Wp Total 44064 Nos.
Nisagra Renewable Energy Pvt. Ltd.		
4	Indave	325 Wp/330 Wp Total: 44232
5	Kasare	325 Wp/330 Wp Total: 44,232 Nos
6	Mukti	325 Wp/330 Wp Total: 44,400 Nos
7	Parola	325 Wp/330 Wp Total: 43,584 Nos
8	Tembhe, Malegaon	325 & 330 Wp Total: 44232 Nos
9	Tinori	325 & 330 Wp Total: 44232 Nos
10	Varul	325 Wp/330 Wp Total: 44064 Nos

C. Inverters:

S.No.	Make	
1.	Manufacturer	Huawei
2.	Rated Capacity	160 KW
3.	No. of Inverters	63

D. Transformer:

S.No.	Make	
1.	Manufacturer	Sudhir
2.	Type	ONAN Step up
3.	Capacity	5 MVA Each
4.	No. of Transformers	2

5.	Serial Numbers	SPL-949, SPL-951
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E. Metering Equipment Details:

S.No.	Make	Solar Plant End
1.	Manufacturer	Secure Make
2.	Type	ABT meters
3.	Accuracy Level	0.2s

The details of the project are mentioned in the table:

Project Investors' Name	Capacity in MW	Village	District	Latitude	Longitude	Commissioning date
Nisagra Renewable Energy Pvt. Ltd.	10 MW	Indave, Sindhkhedha	Dhule	21° 14'09.6"N	74° 26' 24.0"E	31/12/2019
	10 MW	Varul, Shirpur	Dhule	21° 24' 46.8"N	74° 45'28.8"E	30/12/2019
	10 MW	Chhail, Sakri	Dhule	20° 55' 26.4"N	74° 16'40.8"E	07/01/2020
	10 MW	Mukti	Dhule	20° 52' 41.7"N	74° 57'40.896"E	29/03/2020
	10 MW	Bahirane, Baglan (Satana)	Nashik	20° 47' 31.2"N	74° 21' 10.8"E	08/01/2020
	10 MW	Vichkheda, Parola	Jalgaon	20° 52' 31.548"N	75° 4' 6.96"E	07/03/2020
	10 MW	Dahidi, Malegaon	Nashik	20° 43' 12.0"N	74°35'24.0"E	16/01/2020
Juniper Green Energy Pvt. Ltd.	10 MW	Vahelgaon, Nandgaon	Nashik	20° 25' 55.2"N	74° 45' 50.0"E	22/01/2020
	10 MW	Rajapur, Yeola	Nashik	20° 10' 48.0"N	74° 37'12.0"E	23/01/2020
	10 MW	Dahiwad, Deola	Nashik	20° 25' 54.912"N	74° 15'25.668"E	21/03/2020

Technical specifications of the each SPV is provided in the section B.1 of the MR. Same are conformed during the onsite visit and commissioning certificates^{11/}, validation report & previous verification reports and found correct.

The project activity was commissioned in

The project activity was in normal operational during the monitoring period and the same has been confirmed during site visit interviews with PP and crosschecked from review of JMR^{9/} &

breakdown^{/12/} records submitted by PP. Power plant was working throughout the monitoring period and same have been conformed from JMR^{/9/} 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, Same is verified during the site visit, and interview with site incharge, VVB team verified that Plant were shut due to maintenance, / same is confirmed by the assessment team with the plant log details and JMRS^{/9/}.

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 site visit 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^{/17/} and JMRS issued by State Utility^{/9/} and Invoices raised by the PP towards state utility.

Also, from review of other documents such as Commissioning certificate^{/11/}, PPA^{/17/} & JMR^{/9/}, it was observed that the rated capacity of the project is 100 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 Maharashtra states of India. Assessment team also checked the locations of the project activity in the registered PDD^{/3/}, validation report^{/3/}. Thus, location provided in MR are found in line with registered documents of the project activity and are as stated in table above.

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 site visit interviews with PP. The grid structure as mentioned in the PDD is still applicable for the project and ex-ante emission factor as proposed in the PDD is used for emission reduction calculation. Assessment team noted that the project activity has entered a power purchase agreement with the MSEDCL^{/17/}. The electricity is fed in the Integrated Indian grid.

Thus, assessment team confirms that the project is implemented as per the registered PDD^{/17/} and no change in project design is envisaged for the present monitoring period.

The amount of GS-VERs achieved during the present monitoring period are 18.15% lower than the estimated value in the PDD. This is not in control of PP. due to the lower PLF months during the monitoring period. The PLF achieved during this monitoring period is 7.05% & same is found within the sensitivity analysis, thus do not have impact on additionality.

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 site visit interviews with PP, and commissioning certificate submitted by PP.

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> Also International REC (I-REC) registry (<https://evident.services/device-register>) is cross-checked and found that this project is not under I-REC as well. Thus, double counting for the current monitoring period is ruled out.

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

Grievance Mechanism:

During the Onsite visit, the verification team confirmed that there is a grievance book/form with GS contact information at the project site office and are accessible to local stakeholders. By checking grievance book submitted by PP, it was able to confirm there are no comments received from the local people for the present monitoring period towards project activity. Moreover, VVB team verified that, during audit contract labour was also interviewed, no negative comment were

received. Local people are happy with the implementation of the project activity as it entrusts employment and improve living standard of local people and villagers.

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., Monthly Joint Meter Reading sheets and the invoices for the complete monitoring period are checked and thus the assessment team confirms that the ER value is conservative and correct.

Consideration of materiality in conducting the verification

In line with Guidelines for Application of materiality in verifications Version 02, 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 can confirm that the monitoring plan is in accordance with the approved methodology ACM0002 Version 19.0^{4/}, 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 GS PDD^{/3/}. All parameters were monitored and determined as per the monitoring plan of the GS PDD as follows:

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

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

The values considered ex-ante for this monitoring period were cross-checked with registered PDD^{/3/}, and their respective sources. The summary of all the ex-ante parameters has been given below:

Parameter/ Description	Value applied	MoV
SDG 13: Climate Action $EF_{grid,OM,y}$ Operating Margin CO ₂ emission factor in year y	0.9610 tCO ₂ /MWh	The value of the parameter was checked from registered PDD ^{/3/} . The value of the parameter was sourced from CEA database version 14.
SDG 13: Climate Action $EF_{grid,BM,y}$ Build Margin CO ₂ emission factor in year y	0.8644 tCO ₂ /MWh	The value of the parameter was checked from registered PDD. The value of the parameter was sourced from CEA database version 14 ^{/14/} .
SDG 13: Climate Action $EF_{grid,CM,y}$ Combined Margin CO ₂ emission factor in year y	0.9368 tCO ₂ /MWh	The value of the parameter was checked from registered PDD. The value of the parameter was sourced from CEA database version 14.

The value mentioned in the Monitoring Report and Emission Reduction Spreadsheet are consistent with the registered PDD. The applied value is correct and justified.

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

1. $EG_{PJ,y}$ = Quantity of net electricity supplied to the grid (MWh).
 98,928.46 MWh amount of electricity supplied to grid.

The parameter $EG_{PJ,y}$ is calculated based on the difference between values of "export" and "import" on the energy meter at the sub-station (evacuation point). The Meter Reading Statement (JMR sheets)^{/9/} 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 project activity includes metering at the substations managed by State Utilities & PP/O&M Contractor. The electricity exported & imported are measured by Energy meters (main meter) installed at each line in substation. The reading is recorded and the difference from last month reading gives the number of units imported/exported. Meters are of ABT Type and of 0.2s accuracy class. 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^{/3/} 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^{/3/}, assessment team cross checked the net electricity value as presented in the JMR^{/9/} 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.

Relevant SDG indicators = 13 Air Control

2. **ER_y:** Reduction in CO₂ emission reduction due to implementation of project activity.

The parameter is calculated using product of electrical energy baseline $EG_{PJ,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor. Same is demonstrated in Emission reduction sheet and achieved value of emission reduction for the current monitoring period is 92,676 tCO_{2e}. The same is thus acceptable to the assessment team and thus emission reduction calculation is correct.

Relevant SDG indicators = 8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities

3. **Number of employment generation and better salary:** Number of people employed directly due to the project activity and better salary given and salary from the o/m contract

The parameter is taken as the total number of people employed directly due to the project activity and better salary given and salary from the o/m contract during current monitoring period. VVB team verified that, during present verification period 04 employment generated by the project activity, moreover INR 1,064,000 amount of salary given to the employee for current verification period. VVB team did not observed, gender inequality in terms of salary has been observed, PP paying equal amount of money for equal work. The same is thus acceptable to the assessment team and verified using Salary slips submitted.

Relevant SDG indicators = 8.6.1 Proportion of youth (aged 15-24 years) not in education, employment or training

4. **Quality of Employment:** Training of Staff

The parameter is taken as the total number of trainings conducted during the current monitoring period for the employees. Same is found as 55 Trainings - Personnel training on Stress management, confined space working and awareness training & O and M Training (Approx.). The same is thus acceptable to the assessment team and verified using training records submitted. Details related to trainings held at the project site is mentioned in Section D.2 of monitoring report, found in line with training records.

5. **Relevant SDG indicators = 4.3.5 Hazardous and Non-hazardous Waste**

The manufacture, trade, release and use of hazardous and non-hazardous chemicals and/or materials. The waste has been disposed to the waste handlers and the firm has comply with all the local laws for monitoring and disposal. Value applied 0.

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 Monthly Joint

Meter Reading^{9/} 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 interviews. The Calibration details are presented in Appendix 2 of this report. Calibration^{10/} of meters carried out by a NABL accredited company 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^{3/} indicators are chosen for the monitoring of sustainable monitoring:

Meth/tool	Relevant indicator	SDG	GS PDD	MR	Compliance
Quantity of 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,	Quantity of net electricity generation supplied by each SPV in this bundle project to the grid in year y in MWh	Yes
- Number of employment generation and Better Salary - Quality of Employment	SDG 8.5.1: Number of people employed directly due to the project activity Relevant SDG indicators = 8.6.1 Proportion of youth (aged 15-24 years) not in education, employment or training		Quantitative employment, Quality of employment Income generation	Quantitative employment, Quality of employment Income generation	Yes
Take urgent action to combat climate change and its impacts	SDG 13: Take urgent action to combat climate change and its impacts		Reduction in CO ₂ emission reduction due to implementation of project activity	Reduction in CO ₂ emission reduction due to implementation of project activity	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 _{pj,y}
Unit	MWh

Description	Quantity of net electricity supplied to the grid				
Source of data checked by the assessment team	Monthly Joint Meter Reading by State Utility ^{/9/}				
Value(s) of monitored parameter	98,928.46 <table border="1"> <thead> <tr> <th>Year</th><th>EG_{PJ,y}</th></tr> </thead> <tbody> <tr> <td>2022</td><td>98,928.46 MWh</td></tr> </tbody> </table>	Year	EG _{PJ,y}	2022	98,928.46 MWh
Year	EG _{PJ,y}				
2022	98,928.46 MWh				
Means of verification:	The parameter EG_{PJ,y} is calculated based on the difference between values of "export" and "import" on the energy meter at the sub-station (evacuation point). The Meter Reading Statement (JMR sheets)^{/9/} 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 project activity includes metering at the substations managed by MSEDCL & PP/O&M Contractor. The electricity exported & imported are measured by Energy meters (main meter) installed at each line in substation. The reading is recorded and the difference from last month reading gives the number of units imported/exported. The installed meters are of 0.2s accuracy class. 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^{/3/} and onsite practice. Assessment team confirms the same during the 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, assessment team cross checked the net electricity value as presented in the JMR^{/9/} 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 are correct. The details of the Meters are provided in appendix 2 of the report				
Cross check mechanism	The JMR is cross-checked with the invoice ^{/9/} 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:	Air quality				
Unit	tCO ₂				
Description	Reduction in CO ₂ emission reduction due to implementation of project activity				
Source of data checked by the assessment team	Calculated as per "Tool to calculate the emission factor for an electricity system,". The data are obtained from "CO ₂ Baseline Database for Indian Power Sector" version 14.0, published by the Central Electricity Authority, Ministry of Power, Government of India.				
Value(s) of monitored parameter	92,676 <table border="1"> <thead> <tr> <th>Year</th><th>ER_y</th></tr> </thead> <tbody> <tr> <td>2022</td><td>92,676 tCO₂e</td></tr> </tbody> </table>	Year	ER _y	2022	92,676 tCO ₂ e
Year	ER _y				
2022	92,676 tCO ₂ e				
Means of verification:	Assessment team checked that the parameter is calculated. The electricity exported & imported measured by Energy meter installed at substation. The Monthly Joint Meter Reading ^{/9/} is cross-checked with the invoice ^{/9/} copies. Emission reduction calculated in thus correct and accurate.				
Cross check mechanism	All the formulas are applied in line with the registered GS4GG PDD				

Relevant SDG Indicator	SDG 8.5.1: Decent Work and Economic Growth												
Data/parameter:	- Quantitative employment, - Quality of employment - Income generation												
Unit	- Number (Trainings) - Number (employees) - INR (salary)												
Description	- Number of Trainings provided to employees & O&M staff - Number of project employees with Number of male/female, permanent/temporary, age and person with disabilities. - Salary given to the employees of the project. The income to all the unskilled workers are made on day to day basis in line with the minimum wage requirements. Annual records of income paid to all the employees would be available.												
Source of data checked by the assessment team	- Training Records (HSE & HR) - Salary Slip of the project employees.												
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. 4 new job created in the current monitoring period. The employment records for the monitoring period are checked by the assessment team and found correct. Breakup is as follows: <table><tr><th>SPVs</th><th colspan="2">Values (Nos)</th></tr><tr><td rowspan="3">Juniper Green Energy Pvt Ltd. & Nisagra Renewable Energy Pvt Ltd</td><td>Skilled</td><td>4 (Permanent)</td></tr><tr><td>Unskilled</td><td>00 (Temporary)</td></tr><tr><td>Total</td><td>04</td></tr></table> During Monitoring period, total 55 trainings were organized (details provided in final monitoring report) includes soft and HSE training. Training details is provided in monitoring report, Same is verified by assessment team with copies of training attendance sheet. Thus accepted. Also, during current monitoring period, total INR 1,064,000 income has been generated by PP. Same is confirmed by Verification team thus accepted.			SPVs	Values (Nos)		Juniper Green Energy Pvt Ltd. & Nisagra Renewable Energy Pvt Ltd	Skilled	4 (Permanent)	Unskilled	00 (Temporary)	Total	04
SPVs	Values (Nos)												
Juniper Green Energy Pvt Ltd. & Nisagra Renewable Energy Pvt Ltd	Skilled	4 (Permanent)											
	Unskilled	00 (Temporary)											
	Total	04											
Means of verification:	The value for number of employments created is taken from Plant employment records, and PP declaration. The value for Cost Spent for salaries is taken from HR records. Verification team interviewed some employees and Local stakeholders.												
Cross check mechanism	Not applicable												

Relevant SDG Indicator	Safeguarding principal 4.3.5:
Data/Parameter	Hazardous and Non-hazardous Waste
Unit	Not applicable-

Description	The manufacture, trade, release and use of hazardous and non-hazardous chemicals and/or materials.
Value(s) applied	0
Measurement methods and procedures	Manual
Monitoring frequency	Once in a Monitoring period
QA/QC procedure	The waste has been disposed to the waste handlers and the firm has comply with all the local laws for monitoring and disposal.
Purpose of data	Analysis of safeguarding principle
Additional comment	No comments-

Relevant SDG outcome has been included in ER sheet and have been found correct. During the site visit interviews with PP, the verification team confirmed that there is a grievance book^{15/} 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^{15/} submitted by PP, it was able to confirm there are no negative comments received from the local people for the present monitoring period. Staff complaints/grievances were addressed as per the company policies. 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 the Indian domestic REC web site (<https://recregistryindia.nic.in/>) & International REC device registry (<https://evident.services/device-register>) and confirms that the project is not undertaking any REC benefits at present nor intended to take it in near future.

Assessment team also checked the other registry like UNFCCC and VCS and found that project is not registered with both mechanisms. 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 verification process Mr. Sudesh Pradhan, 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	0 MWh	98,928.46 MWh	98,928.46 MWh
SDG 8: Decent Work	0 Trainings 0 Employees	55 Trainings 04 Employees	55 Trainings 04 Employees

Item	Baseline estimate	Project estimate	Net benefit
Economic Growth			INR 1,064,000
SDG 13: Climate Action	92,676 tCO ₂ e	0 tCO ₂ e	92,676 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	239,771 MWh/Year 120,871 MWh for current M.P.	98,928.46 MWh
SDG 8: Decent Work and Economic Growth	01 Trainings provided to O&M Staff 67 employment generation	55 Trainings provided to O&M Staff 04 employments generation INR 1,064,000
SDG 13: Climate Action	224,617 tCO ₂ e/Year 113,232 tCO ₂ e for current M.P.	92,676 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^{/1/} & Final Monitoring report Version 04^{/1/} and corresponding ER calculation spread-sheets^{/2/} and are consistent with the applied methodology ACM0002 Version 19.0^{/4/} 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 01 & Final Monitoring report Version 04^{/1/} and corresponding ER calculation spread-sheets^{/2/}. 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 using equation below:

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

$$BE_y = 98,928.46 \times 0.9368 = 92,676 \text{ tCO}_2\text{e (round down figure)}$$

Year	Baseline emission (tCO ₂)
2022	92,676
Total	92,676

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 92,676 tCO _{2e}

Project emissions:

The project is a solar power project, no fossil fuel is be consumed according to the methodology ACM0002 Version 19.0 & according to registered PDD, $PE_y = 0 \text{ tCO}_2\text{e}$

Leakage:

As per ACM0002 Version 19.0, No leakage emission needs to be considered.

Emission reductions:

Thus, the emission reductions are:

$$ER_y = BE_y - PE_y$$

$$= 92,676 - 0$$

$$= \mathbf{92,676 \text{ tCO}_2\text{e}}$$

The actual achieved emission reduction for this monitoring period is 18.15% lower than estimated value in the GS PDD (92,676 tCO_{2e} against estimated 113,232 tCO_{2e} for 184 operational days with estimated 224,617 tCO_{2e}/annum). Thus, the decrease in actual emission reduction are justified.

3.7 Management and Operational System

The responsibilities of data measurement, collection, verifying, archiving etc. have been clearly defined in the registered PDD^{/3/}. The same practice is followed onsite and it is confirmed by the assessment team during the site visit 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.

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

It's verified during the site visit 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 02/03/2023, Monitoring report version 02 dated 05/05/2023 Monitoring report version 03 dated 10/05/2023 Monitoring report version 04 dated 02/06/2023 Monitoring Report 05 dated: 27/08/2023 Monitoring Report version 06 dated: 26/10/2023 Final Monitoring Report version 07 dated: 25/11/2023
2.	ER sheets Version 01 dated 02/03/2023 ER Sheets version 02 dated 05/05/2023 ER Sheets version 03 dated 10/05/2023 ER sheet version 03.1 dated 27/08/2023 ER Sheet version 03.2 dated 26/10/2023 Final ER Sheet version 03.3 dated 25/11/2023
3.	Registered PDD Version 05 dated 04/08/2020, Final GS Validation report version 01 dated 17/04/2020 Verification Report (1 st Verification), version 03 Dated 16/09/2021 Verification Report (2 nd Verification), version 1.0 Dated 15/11/2021 Verification Report (3 rd Verification), version 4.0 dated 26/08/2022 Verification Report (4 th Verification), version 2 dated: 17/10/2022 Performance Review (4 th Verification), version 1.2 GS Design documents
4.	ACM0002 Version 19.0 "Tool to calculate the emission factor for an electricity system Version no 7.0"
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

LIST OF DOCUMENTS	
S. No.	Document/Evidence/Reference/Web link, Version, Date
15.	Grievance register
16.	HSE procedures
17.	Power purchase agreement
18.	O&M agreement
19.	Technical manual from the Manufacturer
20.	Employment records

5. **FINAL VERIFICATION STATEMENT**

Applus+ Certification has been engaged by Juniper Green Energy Pvt Ltd to perform the 5th verification of the “100 MW Solar Power plant in Maharashtra” (GS Ref. No. GS7533).

The management of Juniper Green Energy Pvt Ltd & Nisagra Renewable Energy Pvt Ltd 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 19.0^{4/}.

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 “100 MW Solar Power plant in Maharashtra” for the monitoring period 01/07/2022 - 31/12/2022 (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: 01/07/2022 - 31/12/2022 (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	92,676 tCO ₂ e equivalents
Emission reductions	92,676 tCO ₂ e equivalents

Vintage wise breakup of verified emission reduction is given below:

Year	Baseline emission (tCO ₂)	Project Emission (tCO ₂)	Emission Reduction (tCO ₂)
01/07/2022 to 31/12/2022	92,676	0	92,676
Total	92,676	0	92,676

Date: 27/11/2023

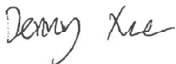
Lead Auditor: Dr. Atul Takarkhede

Tech. Expert: Dr. Atul Takarkhede

Tech. Reviewer: Mr. Denny Xue

Approver (*Applus+ Certification VVB Technical Manager*)

Mr. Agustín Calle de Miguel

ASSESSMENT TEAM	
Lead Auditor: Dr. Atul Takarkhede	Technical Reviewer: Mr. Denny Xue
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:	Sustain-Cert	Ref. to checklist in above tables:	N/A
Description of the audit finding		Date:	10/05/2023
FAR # 1: As per P&R sec 5.1.39, an annual report shall be submitted for each monitoring year by end of next calendar year for which verification is not completed.			
Project Participant's response		Date:	10/05/2023
As per P&R sec 5.1.39 If a verification is in progress but not completed, then an Annual Report is still required by the end of calendar year so for the project activity the annual report for year 2022 has been already submitted and for next verification the annual report will be submitted before the end on the year 2023.			
Documentation provided as evidence by Project Participant			
MR Version 03.			
Auditor's assessment comment		Date:	10/05/2023
VVB team verified that, PP has incorporated the FAR raised by sustain-cert in revised monitoring report, Moreover PP has submitted the annual report for 2022 and the current verification is still going on VVB team will submit the annual report will be submitted before the end on the year 2023. Thus, FAR is closed.			

Type:	☐ CAR ☒ CL/CR ☐ FAR	Number:	01
Raised by:	Dr. Atul Takarkhede	Ref. to checklist in above tables:	N/A
Description of the audit finding		Date:	26/04/2023
In order to verify any FAR raised by Sustain Cert during previous Performance review of the project activity. Thus, kindly provide final performance review report to verify the same.			
Project Participant's response		Date:	05/05/2023
There is no FARs from design review or previous performance review / verification, the final performance review report is submitted with the responses to verify the same.			
Documentation provided as evidence by Project Participant			
Performance review report			
Auditor's assessment comment		Date:	10/05/2023
VVB team verified that, PP has submitted the performance review report. And one # FAR was raised by the sustain-cert. which was mention below. Thus, CL is closed.			

Type:	☐ CAR ☒ CL/CR ☐ FAR	Number:	02
Raised by:	Dr. Atul Takarkhede	Ref. to checklist in above tables:	3.5
Description of the audit finding		Date:	26/04/2023

Following observation is made by the assessment team regarding monitoring parameter;

For the parameter SDG 8:

1. The gender sensitivity assessment is required in GS4GG project activity. Provide details of the female and male employment in the MR and evidence like-
 - The daily attendance registers and salary/wages sheet for total number of direct employees.
 - The Letter from O&M contractor /other contractors for employment generation along with salary sheets/attendance registers etc.
2. Training records for the complete monitoring period, to verify the trainings provided for the project activity

Corrective action is sought for the same.

For the parameter SDG 7:

1. PP is requested to submit the monthly meter reading for the monitoring period along with the invoices, to verify the energy generated by the project activity mentioned in ER sheet. Moreover, the training records in MR is not inline with the ER sheet. Also, in order to cross check the generated energy the cross check mechanism of invoice is not available. Kindly clarify.

Project Participant's response	Date:	05/05/2023
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Responses regarding monitoring parameter:

For the parameter SDG 8:

1. The employee details based on gender incorporated in section D.2 and below mentioned evidences are submitted with the responses.
 - Attendance records of employees.
 - Salary slips, Offer letter and O&M expenses declaration.
2. Training records for the complete monitoring period is submitted with the responses.

For the parameter SDG 7:

The JMRs along with invoices for cross check are submitted with the responses. Further, the training record in the MR is updated and now it is consistent with ER sheet.

Documentation provided as evidence by Project Participant

1. Attendance records
2. Salary slips
3. Offer letter
4. O&M declaration
5. Training records
6. JMRs
7. Invoices
8. MR version 2.0

Auditor's assessment comment	Date:	10/05/2023
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For the parameter SDG 8:

- VVB team found that, PP has provided the employment details in revised monitoring report. VVB team found that, due to remote location no women were employed at project site, however female employment provided at head office of the project activity. CAR is closed.
- PP has submitted the attendance register to the VVB team.
- VVB team verified that, PP has submitted the employment generation records and salary slip.
- VVB team verified that, PP has incorporated the training details in revised monitoring period, moreover to verify the same, training register has been submitted.

For the parameter SDG 7:

- VVB team found that, PP has submitted the monthly meter reading in ER sheet. To further verify the same, PP has submitted the JMR, PP has also submitted the crosscheck mechanism invoices value in revised ER sheet. Thus, CL is closed in this section.

Type:	☐ CAR ☒ CL/CR ☐ FAR	Number:	03
Raised by:	Dr. Atul Takarkhede	Ref. to checklist in above tables:	3.2
Description of the audit finding		Date:	26/04/2023
1. The some of the site of the project is commissioned on 2019 and some project sites in 2020 year. To verify the same supporting evidences are found missing. Kindly submit. 2. Moreover, PPA is requested to submit PPA document along with the proof for the change in location for some sites of project activity. Kindly submit.			
Project Participant's response		Date:	05/05/2023
1. Commissioning certificates of all sites are submitted with the responses. 2. PPA for all 10 sites are submitted with the responses and the locations are not changed it is in line with registered PDD (please refer section A4.4 of PDD) and can be cross checked by PPA. There was typographical error in the registered PDD related to the geo coordinates of locations. The village, district and state are same as registered PDD so in the current monitoring report geo coordinates have been corrected and geo coordinates may be verified with the google earth.			
Documentation provided as evidence by Project Participant			
1. Commissioning certificates of all 10 sites. 2. PPA of all 10 sites. 3. Registered PDD.			
Auditor's assessment comment		Date:	10/05/2023
1. VVB team verified that, commissioning date of the project activity is found consistent with submitted copy of the commissioning certificate. 2. VVB team verified that, PP has submitted the, PPA for all 10 sites are submitted, which is signed between Juniper & MSEDCL. And thus, through onsite visit VVB team verified that, geo coordinates of the village, district and state are same as registered PDD so in the current monitoring report has been updated by the project proponent. Thus, CL is closed.			

Type:	☐ CAR ☒ CL/CR ☐ FAR	Number:	04
Raised by:	Dr. Atul Takarkhede	Ref. to checklist in above tables:	N/A
Description of the audit finding		Date:	26/04/2023

In order to verify continuous ongoing communication practice at the project site, PP shall provide the evidence as the supporting document for the same.		
PP is requested to submit HSE logbook for hazardous waste management (Latest) for the project activity.		
Project Participant's response	Date:	05/05/2023
1. The copy of grievance register is submitted with the responses to demonstrate the continuous ongoing communication practice. 2. The Evidence for hazardous waste management agreement is submitted with the responses. And since commissioning no hazardous waste produced by project activity so no records (HSE logbook) available.		
Documentation provided as evidence by Project Participant		
1. The copy of grievance register. 2. Agreement for hazardous waste management.		
Auditor's assessment comment	Date:	10/05/2023
1. VVB team verified that, there is no negative comment received during the site visit, moreover PP has submitted the copy of the grievance register to the VVB. 2. PP is submitted the copy of the hazardous waste handling agreement which is signed between juniper green and Asian Barrels. For decontamination of empty barrels, and Plastic pallets liner bags being generated from our solar power plant shall be given for recycling to M/s Asian Barrels. Thus, CL is closed in this section.		

Type:	☐ CAR ☒ CL/CR ☐ FAR	Number:	05
Raised by:	Dr. Atul Takarkhede	Ref. to checklist in above tables:	N/A
Description of the audit finding	Date:	26/04/2023	
PP is requested to submit evidence to verify the calibration details mentioned in MR of the project activity. Kindly, submit.			
Project Participant's response	Date:	05/05/2023	
Calibration details of all 10 sites for main meter and check meter are submitted with the responses.			
Documentation provided as evidence by Project Participant			
Calibration certificates of all 10 sites			
Auditor's assessment comment	Date:	10/05/2023	
VVB team verified that, PP has submitted the energy meter calibration certificate to the VVB team, which is found consistent, further no delay has been observed. CL is closed in this section.			

Type:	☐ CAR ☒ CL/CR ☐ FAR	Number:	06
Raised by:	Dr. Atul Takarkhede	Ref. to checklist in above tables:	N/A
Description of the audit finding	Date:	26/04/2023	
The project is registered in GS4GG, to verify if there is no double counting of the emissions, PP is requested to submit the supporting evidences. Kindly, submit.			
Project Participant's response	Date:	05/05/2023	

No double counting declaration is submitted with the responses.		
Documentation provided as evidence by Project Participant		
No double counting declaration		
Auditor's assessment comment	Date:	10/05/2023
VVB team verified that, PP has submitted the No double counting declaration dated 23/01/2023 to the VVB team. CL is closed in this section.		

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	01
Raised by:	Dr. Atul Takarkhede	Ref. to checklist in above tables:	N/A
Description of the audit finding		Date:	26/04/2023
Following observations/discrepancies observed during review of the monitoring report/ER sheet: 1. Inline with the guidelines to complete GS MR, various mistakes found in submitted MR and same are commented in applicable sections of the MR. Corrective action sought. 2. The tool numbers are found missing for many tool descriptions throughout the MR. Corrective action sought. 3. Geo coordinates of the location for the project activity found not inline with the registered GS-PDD V.5.0. corrective action sought. Further the location provided in section A2. Of the MR is not inline with the GS guideline. PP is requested to provide City/ town/ community details. 4. The project activity is solar power plant and the energy generated is selling to the grid. The details of the grid to which the project is connected is not been reported in the MR. corrective action sought. 5. PP is requested to submit the technical manufacturers specifications to verify the technical details mentioned in section B1. of the MR. Corrective action sought. Thus, CAR is raised.			
Project Participant's response		Date:	05/05/2023
Following things are updated in MR: 1. Whole MR is updated as per monitoring report template guidelines V1.1. 2. Tool number is incorporated in section A.3 of MR. 3. The locations in the PDD and MR are same but the Geo coordinates was typographical error and same is now corrected in the section B.2 of revised MR. 4. The project activity is solar power plant and the energy generated is selling to the Indian grid and the substations are connected to Maharashtra State Electricity Distribution Co. Ltd. The same information is updated in the MR. 5. Technical specifications are submitted with the responses to verify the technical details mentioned in section B1 of the MR.			
Documentation provided as evidence by Project Participant			
1. MR version 2.0. 2. Technical specifications			
Auditor's assessment comment		Date:	10/05/2023

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	01
Raised by:	Dr. Atul Takarkhede	Ref. to checklist in above tables:	N/A
- VVB team verified that, PP has updated the MR, which is now found consistent with section 1.1 of GS monitoring report template guideline. - Tool no has been now updated in revised monitoring report. - VVB team verified that, Geo coordinates was typographical error, which is now updated in the section B.2 of revised MR. - Details about the substation through which the project activity is connected is now updated in revised monitoring report, which is found consistent. And accepted by PP. - Technical specification of the project activity is now updated in revised monitoring report, moreover to verify the same PP has submitted the technical specification document to the VVB team. Thus, CAR is closed in this section.			

Appendix 2: Calibration details of monitoring meters

Details of Meter Calibration:

Project Proponent	Sr. No	Location	Main Meter	Check Meter	Calibration Date	Calibration Due date
Nisagra Renewable Energy Pvt. Ltd.	1	Indave – (5 MW -BAY1)	2872718	2872719	15/03/2021	14/03/2026
		Indave - (5 MW -BAY2)	2872736	2872737	15/03/2021	14/03/2026
	2	Varul – (5 MW -BAY1)	2872720	2872721	12/03/2021	11/03/2026
		Varul - (5 MW -BAY2)	2872722	2872723	12/03/2021	11/03/2026
	3	Sakri – (5 MW -BAY1)	2872724	2872725	03/03/2021	02/03/2026
		Sakri - (5 MW -BAY2)	2872726	2872727	03/03/2021	02/03/2026
	4	Mukti – (5 MW -BAY1)	2872728	2872729	15/03/2021	14/03/2026
		Mukti - (5 MW -BAY2)	2874871	2874872	15/03/2021	14/03/2026
	5	Bahirane – (5 MW -BAY1)	2872741	2874840	30/12/2019	29/12/2024
		Bahirane - (5 MW -BAY2)	2874845	2872643	31/12/2019	30/12/2024
	6	Dahidi – (5 MW -BAY1)	2874788	2868876	31/12/2019	30/12/2024
		Dahidi - (5 MW -BAY2)	2872626	2872742	31/12/2019	30/12/2024
Juniper Green Energy Pvt. Ltd.	7	Parola – (5 MW -BAY1)	2892219	2892218	17/01/2020	16/01/2025
		Parola - (5 MW -BAY2)	2892222	2892221	17/01/2020	16/01/2025
	8	Vahelgaon – (5 MW -BAY1)	2892214	2892211	06/01/2020	05/01/2025
		Vahelgaon - (5 MW -BAY2)	2892215	2892228	06/01/2020	05/01/2025
	9	Rajapur – (5 MW -BAY1)	2892216	2892213	06/01/2020	05/01/2025
		Rajapur - (5 MW -BAY2)	2892226	2892227	06/01/2020	05/01/2025
	10	Dahiwad – (5 MW -BAY1)	Q0430220	Q0431118	11/05/2021	10/05/2026
		Dahiwad - (5 MW -BAY2)	2892234	2892233	17/01/2020	16/01/2025

Note: VVB team verified that, there were no meter changed during the current monitoring period.

Appendix 3: Audit Team CVs

Name	SHORT CV. BACKGROUND INFORMATION
Dr. Atul Takarkhede	Dr. Atul Takarkhede is Ph.D. (Environmental Sciences) from Institute of Science, RTM Nagpur University, Nagpur, and he has already published different technical papers related to environmental sciences. He counts with more than 11 years of experience in field of Environmental Auditing, consulting and accreditation. He is an expert in ISO 9001-14001, CO2/GHG Reporting, Carbon Foot Print, Energy, Water and Waste Management reporting for organizations' environmental performance. His professional portfolio is mainly related with carrying out EIA, conducting QA/QC of EIA Reports; conducting environmental/water audits; NABET requirements appliance, functional area expert in Water Pollution & Solid & Hazardous Waste management among others. Furthermore, he counts with solid experience on CDM-VCS-GS consultancy and auditing. Currently he is associated with True Quality Certifications Private Limited and empanelled with Applus+ Certification to carry out GHG audits in the aforementioned schemes.
Mr. Denny Xue	Mr. Denny Xue (Master's Degree in Environmental Engineering, Bachelor's Degree in Thermal Engineering) is an Auditor appointed by Applus+ LGAI for the GHG project assessment, auditing and technical review. He has more than 6 years of work experience in CDM/GS4GG/VCS project assessment and technical review with Applus+. Before he joined Applus+ LGAI, he has been working for Shanghai Chuanji Investment and Management which is a CDM consultancy company as a project manager for CDM project development. Mr. Denny Xue is based in Shanghai, China. Mr. Denny Xue participates in the project's technical review team.