

GS4GG Verification (Performance Certification) Report



Certification Pvt. Ltd.

VKU Certification Pvt. Ltd.

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Project Title
120 MW Solar PV Plant by Juniper Green Sigma Private Ltd. in Gujarat
Registry Project ID: GS-7572
Monitoring Period: 01-January-2023 to 30-June-2023 (Inclusive of both the dates)
Project Representative
Infinite Environmental Solutions Limited
VKU Project Reference No.
VKU.VER.03.23_GS_7572

Executive Summary:

A) Basic information		
Project Title	120 MW Solar PV Plant by Juniper Green Sigma Private Ltd. in Gujarat	
GS4GG Project ID:	7572	
Date of Project Design Certification	09/11/2020	
Last Date of Annual Report	14/12/2022	
VKU Project Reference No.	VKU.VER.03.23 GS 7572	
Sectoral scope	Scope: 01 Energy Industries (renewable- and non-renewable sources)	
Methodology/ies applied	ACM0002: Version 20.0	
Technical Area (TA)	T.A 1.2	
Project Representative	Infinite Environmental Solutions Limited	
Project Developer/Investor	Juniper Green Sigma Private Limited	
GS4GG Activity Requirements	Renewable Energy Activity	
GS4GG Certified Product	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A	
Selected Sustainable Development Goals	SDG 7 - Affordable and Clean Energy SDG 8 - Decent Work and Economic Growth SDG 13 - Climate Action (Mandatory)	
GS4GG SDG Impact Statement	SDG 7 – 160,663.78 MWh of renewable energy generated SDG 8 – Training – 23 Employment- 19 Income (INR) – 39,48,968 per month SDG 13 – 151,329 tCO ₂ (GS VER)	
Scale of Project Activity	Large Scale	
B) Verification		
Start date of crediting period	17/10/2020	
End date of crediting period	16/10/2025	
Monitoring Period	01/01/2023 – 30/06/2023 (Inclusive of both the dates)	
C) Monitoring report	Version	Date
Initial	1.0	13/07/2023
Final	2.2	23/01/2024
D) Performance Certification report	Version	Date
Initial	1.0	28/10/2023
Final	1.2	05/02/2024
E) Verification Team		
Team Leader ¹	Barun Kumar	

¹ Team Leader is an approved GS Auditor for VKU.



Technical Expert (TA 1.2)	Barun Kumar T.A.1.2						
Validator/Verifier	Niharika Kaushik						
Validator/Verifier- Trainee	Anil Dhankar						
Project Trainee	Priyanshee Modi						
F) Approvals							
Technical Reviewer ²	Sanjay Kumar						
Technical Expert (TA 1.2)	Sanjay Kumar						
G) Final opinion							
VKU Certification performed the fifth verification of first crediting period of the GS4GG project “120 MW Solar PV Plant by Juniper Green Sigma Private Ltd. in Gujarat” with GS4GG 7572 as Reference Number. The verification includes confirmation about the implementation of the PDD/13/monitoring plan and the monitoring methodology as per ACM0002 “Grid-connected electricity generation from renewable sources – Version 20.0” /12/. VKU Certification confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements. The emission reductions from the GS4GG project activity ID 7572 “120 MW Solar PV Plant by Juniper Green Sigma Private Ltd. in Gujarat” in India during the period 01/01/2023 – 30/06/2023 (Inclusive of both the dates) amount to 151,329 tCO₂e. <table border="1"> <thead> <tr> <th>VVB Opinion</th> <th>Conclusion</th> </tr> </thead> <tbody> <tr> <td>Positive</td> <td>☒ (Mark Tick if applicable)</td> </tr> <tr> <td>Negative</td> <td>☐ (Mark Tick if applicable)</td> </tr> </tbody> </table>		VVB Opinion	Conclusion	Positive	☒ (Mark Tick if applicable)	Negative	☐ (Mark Tick if applicable)
VVB Opinion	Conclusion						
Positive	☒ (Mark Tick if applicable)						
Negative	☐ (Mark Tick if applicable)						
Therefore, VKU certification recommends a request of Issuance to GS4GG.							
H) Authorization							
Director	Vikas Kumar Aharwal						
Date	05/02/2024						
I) Distribution							
No public distribution without written confirmation from the client.							
J) Verification Status							
Findings closed	Yes						
Draft report	Yes						
Final report	Yes						

² Technical Reviewer is an approved GS Auditor for VKU.

Abbreviations

CAR	Corrective Action Request
AT	Assessment Team
BE	Baseline Emissions
BM	Build Margin
CERs	Certified Emission Reductions
CL	Clarification Request
EB	Executive Board
ERs	Emission Reductions
FVR	Final Verification Report
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GSS	Grid Sub Station
GUVNL	Gujarat Urja Vikas Nigam Limited
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
LE	Leakage Emissions
MoV	Means of Verification
MR	Monitoring Report
NGO	Non-governmental Organization
ODA	Official Development Assistance
OM	Operating Margin
(O&M)	Operation and Maintenance
PDD	Project Design Document
PE	Project Emission
PPA	Power Purchase Agreement
PSA	Power Sale Agreement
PV	Photovoltaic
Ref.	Document Reference
SECI	Solar Energy Corporation of India Ltd
SCADA	Supervisory Control and Data Acquisition
SS(s)	Sectoral Scope(s)
TA(s)	Technical Area(s)
TR	Technical Reviewer
UNFCCC	United Nations Framework Convention on Climate Change
VERs	Verified Emission Reductions
VKU	VKU Certification Ltd.
VT	Verification Team
VVS	Validation and Verification Standard

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1. INTRODUCTION

1.1 Executive Summary

Project Overview:

Project entails installation & operation of a 120 MW (AC) solar power initiative, executed by Juniper Green Sigma Private Limited in State: Gujarat, India. The primary objective of this undertaking is to generate clean electricity from renewable solar energy sources. The project entails the installation of **431,284** photovoltaic modules with rated capacity of **405 Wp & 410 Wp** respectively.

The details of the project are mentioned in the table:

Table no 01: Project Capacity Details

Project investor's Name	Registry ID	Capacity	Total number of PV Modules	Rated Power	No of Modules
Juniper Green Sigma Private Limited	GS 7572	120 MW (AC)	431,284	405Wp	322028
				410Wp	109256

Energy Source:

This project harnesses solar energy to generate electricity through its **120 MW_{AC}** solar power installation. The generated electricity is seamlessly integrated into the Unified Indian Grid. Notably, this procedure abstains from utilizing fossil fuels, ensuring the absence of greenhouse gas emissions. Consequently, this project contributes positively to the environment by producing sustainable power without adverse ecological effects.

By implementing the project activity, the following GHG sources of emissions are reduced/avoided:

Table no 02: GHG SSRs Details

Baseline/Source	Generation of electricity by fossil fuel- dominated grid connected power plants
Project Equipment/Sink	Avoidance of GHG emission into the atmosphere is due to generation of electricity by renewable means i.e., Photovoltaic Modules/Installed Solar Power Plant of this project and exporting to Unified Indian Grid which is in line with 3.1.1 of ISO:14064 part -2
Baseline GHG emission source reduced/avoided	CO ₂ emissions from fossil fuels and other fuel fired grid connected plants/projects.

Project Nature & Implementation:

The main purpose of the project activity is to generate electrical energy through sustainable means by utilizing solar power resources, the generated green electricity is contributing to climate change mitigation efforts. This project activity is a large-scale grid connected Solar PV power project.

Start date of the project activity is i.e., **04/03/2020**. This is the date of the date of earliest Purchase Order. The entire project is in continuous operation since its date of commissioning of the power plant.

Juniper Green Sigma Private Limited is the project investor for this project activity. For this monitoring period **01/01/2023 to 30/06/2023 (both dates included)** project activity is reducing anthropogenic emissions of greenhouse gases (GHG's) **151,329 tCO₂**, thereon displacing **160,663.78 MWh** amount of electricity from the generation-mix of power plants connected to the Indian electricity grid (Unified Indian Grid), which is mainly dominated by thermal/ fossil fuel-based power plant.

Project Location:

The project activity is located in the **Gujarat state of India**. The project activity is connected to Unified Indian Grid. Under this project activity 120 MW (AC) of Solar PV technology is being implemented at the below stated specific locations.

Below table outlines the Latitude and Longitude of the project location:

Table no 03: Project Location

S.No.	Village	District	From		To	
			Latitude	Longitude	Latitude	Longitude
1	Babsar	Sabarkantha,	24°25'33.88"N	71°44'21.61"E	24°25'36.10"N	71°44'07.59"E
2	Bhordu	Banaskantha	23°58'32.67"N	72°54'26.79"E	23°58'35.60"N	72°54'41.21"E
3	Bilvaniya, Vantdu Suka	Aravalli	23°19'36.21"N	73°17'00.03"E	23°19'27.63"N	73°16'52.46"E

A Power Purchase Agreement is signed at Vadodara on 21/05/2019 between Juniper Green Sigma Private Limited & Gujarat Urja Vikas Nigam Ltd (GUVNL) /30/ that confirms that electricity generated at the plant site is supplied to state DISCOM i.e., GUVNL to support the Indian Grid.

The PV system mainly consists of PV modules, module mounting structures, inverters, regulators, monitoring devices etc. Technical Specifications of the SPVs include- 3-phase alternating current, Nominal frequency is 50 Hz, Final Voltage at Delivery Point is 66kV.

The electricity generated from the project activity shall be evacuated as follows:

Table No 04: Project Activity Delivery Points

Site	Final Delivery Points	Final Voltage
Babsar	66 kV Babsar S/s	66 kV
Bhordu	66 kV Bhordu S/s	66 kV
Khadol	66 kV Khadol S/s	66 kV

1.2 Objective

Infinite Environmental Solutions Limited (Project Representative) has contracted VKU Certification Private Limited (VKU Certification) to conduct the verification and certification of emission reductions reported for the GS4GG project activity 7572 **"120 MW Solar PV Plant by Juniper Green Sigma Private Ltd. in Gujarat"** in India for the period 01/01/2023 – 30/06/2023 (both dates included). This report contains the findings of the verification process and a certification statement for the certified emission reductions, as per GS4GG validation and verification standard v 1.0 para 1.1, 9.1 and sub para 9.1.1 /5/.

The verification is the periodic independent review and ex post determination by VKU Certification of the monitored reductions in GHG emissions that have occurred as a result of the registered GS4GG

project activity during a defined monitoring period. Certification is the written assurance by VKU Certification that, during a specific period in time, a project activity achieved the emission reductions as verified.

VKU conducted verification for the fifth monitoring period 01/01/2023 – 30/06/2023 (inclusive of both dates) for a period of 6 months 00 days (181 days) under first crediting period. The project activity follows a renewable crediting period of 5 years, which can be renewed a maximum of two times, as outlined in section A.3 of GS4GG PDD Version 6.0 dated 11/01/2021/14/ which is in-line with GS4GG Principle & Requirement /1/.

The objectives of this verification exercise are, by review of objective evidence, to establish that.

- The project activity has been implemented and operating as per the registered GS4GG PDD/14/ and that all physical features (technology, project equipment, and monitoring) of the project are in place;
- Monitoring report/19/ and other supporting documents are complete;
- The data is recorded and stored as per the monitoring methodology and approved monitoring plan.
- To confirm that the monitoring system is implemented and fully functional to generate Verified Emission Reductions (GS VERs) without any double counting as per the Self Declaration /32/.
- To establish that the data reported are accurate, complete, consistent, transparent, and free of material error or omission by checking the monitoring records and the emissions reduction calculation.

Additionally, meticulous scrutiny of the monitoring records and emissions reduction calculations has been carried out to guarantee the completeness, consistency, transparency and absence of any material errors or omissions in the reported data. This aims to establish the reliability and integrity of the data.

1.3 Scope and Criteria

The scope of this verification was the independent objective review and ex-post determination of the monitored reductions in GHG emissions from the “120 MW Solar PV Plant by Juniper Green Sigma Private Ltd. in Gujarat”. The verification of this project was based on the validated & registered GS4GG PDD version 06., dated: 11/01/2021/14/, Monitoring report version 2.2 dated 23/01/2024/19/ and ER sheet version 2.1 dated 23/01/2024/20/ along with supporting documents /21/ /22/ /23/ /24/ /25/ /26/ /27/ /28/ 29/ 30/ 31/ 32/ 33/ 34/ 35/ 36/ 37/ submitted by the project representative to the VKU assessment team. The documents thus submitted to the VKU Assessment Team were reviewed against the following guidance and protocol:

1. GS4GG Validation and Verification standard v1.0 para 1.2 /5/
2. GS4GG Validation and Verification standard v1.0 para 9.7.2 /5/.
3. GS4GG Principles Rules and Requirements v1.2 /1/.
4. CDM: Tool for the demonstration and assessment of additionality 7.0
5. CDM: Tool to calculate the emission factor for an electricity system 7.0
6. CDM: Approved Large Scale Consolidated Methodology: ACM0002 “Grid-connected electricity generation from renewable sources” Version 20.0

The steps involved are as follows:

- To assess the project's compliance with other relevant rules including the host country (India) legislation.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement & is sufficiently supported by evidence.
- The verification process ensures that the reported emission reductions are comprehensive and accurate in order to obtain certification.
- To establish that the data reported are accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reduction calculation /14/.
- To verify that reported GHG emission data is sufficiently supported by evidence
- The verification considers both quantitative and qualitative information on emission reductions.
- The verification also considers the monitoring of sustainable parameters.

The verification method and criteria encompassed several phases, including

- Desk Review of GS4GG project design document version 6.0 dated:11/01/2021/14/, and supporting documents listed in Section 04 of this report, which is provided by the Project Representative to assessment team.
- Onsite visit was conducted by VKU in line with Site Visit and Remote Audit Requirements and Procedures Version 02 dated 30/05/2023 /7/. The last two verification were done remotely by the respective VVBs, & this is the fifth verification of the project activity and first one undertaken by VKU Certification Private Limited, so VVB decided to conduct an Onsite Visit for the said project activity /38/ and interviews with stakeholders /41/.
- Reporting, calculation checks, QA/QC and resolution of findings
- Drafting of verification report
- Independent technical review of the project documentation
- Issuance of the final verification report
- Submission of the request for issuance, as appropriate

Outstanding issues were resolved, leading to the issuance of the final verification report.

It is important to note that the verification process does not involve providing consultancy to the project proponents. However, requests for clarifications and corrective actions may have contributed to improvements in the monitoring processes.

1.4 Level of Assurance and Application of Materiality

All the revisions of the verification report before being submitted to the client were subjected to an independent internal technical review to confirm that all verification activities had been completed

according to the pertinent VKU's procedure, with a Reasonable level of assurance, as per the GS4GG validation and verification standard v1.0 /5/ and GS4GG Principles and Requirements v1.2 /1/.

VVB applies the general requirements, consideration of materiality in planning verification and for conducting verification is as per the GS4GG validation and verification standard v1.0, para 9.6/5/.

For the identification of materiality threshold VVB referred para 9.6.3 of validation verification standard v1.0 and apply to the total emission reduction achieved by the Project Activity.

As per the GS4GG validation verification standard section 9.6, the level of assurance of the verification report falls under reasonable assurance engagements with respect to material errors, omissions, and misrepresentations.

Table 05. Materiality threshold Calculation

Application of Materiality Threshold as per the GS4GG VVS v1.0 para 9.6.3	Materiality threshold value (tCO ₂ e)	Reported ERs (tCO ₂ e) 01/01/2023 to 30/06/2023		Justification (If any deviation)
		In Initial MR	In Final MR	
1.0%	1,513.29 tCO ₂ e	151,329 tCO ₂ e	151,329 tCO ₂ e	There is no deviation, hence this section is not applicable.

1.5 Basic information of project activity

Table No 06: Project Information

Title of project activity	120 MW Solar PV Plant by Juniper Green Sigma Private Ltd. in Gujarat
GS4GG Reg. No.	7572
Scale of project activity	Large Scale
Applied Methodology/ies	ACM0002 "Grid-connected electricity generation from renewable sources – Version 20.0"
Sectoral Scope(s) / Technical Area(s)	Scope: 01 Energy Industries (renewable- and non-renewable sources) T.A.1.2 (Solar)
Project Representative	Infinite Environmental Solutions Limited
Host Country	India
Location of project activity	The project activity is located at Babsar Village of Sabarkantha District, Bhordu Village of Banaskantha District, Bilvaniya and Vantda Suka village of Aravalli District in the Gujarat state of India.
Start date of crediting period (with reference to this monitoring period)	First Crediting Period - 09/11/2020 to 08/11/2025 (both dates included) as confirmed from the section C of the registered PDD version 06 dated 11/01/2021 and from the Sustain Cert Project Webpage
Type and length of crediting period	Type - Renewable Length - 5 years



Monitoring period	01/01/2023 – 30/06/2023 (both dates included)
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Table 07. VVB Information

Name of the VVB	VKU Certification Private Limited
GS accreditation expiry date	20/06/2026
Is the VVB accredited for the applicable sectoral scope?	Yes
Name, position of the approver of the verification report	Dr. Vikas Kumar Aharwal
Signature (Final version only)	

Table 08: Sustainable Development Contributions for verification

Sustainable Development Goals Targeted	SDG Impacts	Estimated Annual Average as per registered PDD³	Units
7 Affordable and Clean Energy	MWh of renewable energy generated	292,335	MWh
8 Decent Work and Economic Growth	Training Employment	Training- 01 Employees- 15	No of Training, Annum No. of Employee
13 Climate Action (Mandatory)	Emission Reduction	275,350	tCO _{2e} (GS-VERs)

³ Refer correction requested by the PD

2. METHODOLOGY

VKU Certification assessed and determined whether the implementation and operation of the project activity, and the steps taken to report emission reductions comply with the GS4GG criteria and relevant guidance provided by the GS4GG impact registry.

The assessment involved a desk review of relevant documentation as well as an **on-site verification** /38/. The personnel employed and their roles in this assessment is mentioned below;

Table No 09: Verification Team member(s)

S.No.	Full Name	Role(s)	Type of Resource	Type Activity(ies) of carried out
1.	Barun Kumar	Team Leader cum Technical Expert (TA 1.2)	Internal Resource	DR/OSV/I/VF/FVR ⁴
2.	Niharika Kaushik	Validator/Verifier	Internal Resource	DR/VF/DVR/FVR
3.	Anil Dhankar	Validator/Verifier Trainee	Internal Resource	DR/VF/DVR
4.	Priyanshee Modi	Project Trainee	Internal Resource	DR

Table no 10: Technical Reviewer and approver(s) of the verification report

S.No.	Full Name	Role(s)	Type of Resource	Type Activity(ies) of carried out
1	Sanjay Kumar K	Technical Reviewer cum Technical Expert (TA 1.2)	External Resource	Technical Review

The competence statement of verification team members is included under Section 7 of this report.

Table no 11: Verification milestones:

Monitoring report submission:	13/07/2023
On-site assessment and Interview:	14/07/2023
Draft Verification Report	28/10/2023
Final Verification Report	05/02/2024

VKU Certification followed a rule-based verification approach, wherein, the contract review is undertaken as per valid/effective version of GS4GG validation/ verification Standard version 01 /5/

⁴ DR- Desk Review
OSV-Onsite Visit
I-Interview
VF- Verification Findings
DVR- Draft Verification Report
FVR- Final Verification Report

clause 1.3. Once the contract is agreed for verification, the monitoring report of the project activity submitted to VVB for further process. Key steps are described in Section 2.1 to 2.4 of this report.

The project activity does not fall under category “grouped projects”, hence no sampling methods was employed by the assessment team and during onsite visit /41/ assessment team reviewed 100% data for this project at site for the verification of GHG emission reductions generated by the project.

- The GHG emission reductions are based on the approved Baseline and monitoring methodology **ACM0002 “Grid-connected electricity generation from renewable sources” Version 20/12/**
- Scope: 01 - Energy Industries (renewable /non-renewable sources)
- Project type: Type I - Renewable energy projects

Tools used for GHG Calculations are as follows as per registered PD/3/:

- Methodological Tool- Tool for the demonstration and assessment of additionality 8 - Version 07.0.0 (EB 70, Annex 08) /17/
- Tool to calculate the emission factor for an electricity system, Version 07.0 (EB 97, Annex 07) /18/

Keeping in line with ISO (14064-3; 2019, clause 06 & 14065-2020, clause 09) Standard guidelines assessment team has framed down the process for completing the verification and has followed the same throughout the execution of audit of the said project GS 7572.

The verification consisted of the following phases.

- a. Planning:** The assessment team plans the GHG-programme and starts with a desk review.
 - b. Strategic Analysis:** Assessment team performed strategic analysis to understand the activities and complexity of the project, and to determine the nature and extent of the verification activities. The results of the strategic analysis shall be used in the risk assessment.
 - c. Risk Assessment;** Assessment team performed risk assessment /44/ of the GHG statement to identify the risk of a material misstatement or nonconformity with the criteria, as per para 9.7.3 (a) and as per para 7.9.2 (e) of the GS4GG VVS V1.0. The same was documented in a different VKU internal document where the type of risks were identified and then evaluated.
 - d. Evidence Gathering Activities;** Using a risk-based approach assessment team prepared evidence gathering activities, to collect sufficient and appropriate evidence upon which the conclusion shall be based. It will also determine whether the GHG statement conforms to the criteria, taking into account the principles of the standards or GHG programme that apply to the GHG statement.
- Need for site visit is identified and site visit is planned. Onsite visit was conducted by VKU in line with Site Visit and Remote Audit Requirements and Procedures Version 02 dated 30/05/2023 /7/. The last two verification were done remotely by the respective VVBs, & this is the fifth verification of the project activity and first one undertaken by VKU Certification Private Limited, so VVB decided to conduct an Onsite Visit for the said project activity /38/ and interviews with stakeholders /41/.

- e. **Audit and Sampling Plan:** An audit plan is prepared, including all sub-elements required for an integrated verification process aligned with the contract, scope, objectives, level of assurance and materiality. /45/
- f. **Evidence Gathering Plan;** The evidence-gathering plan is prepared based on the results of the VKU's Assessment Team's risk assessment. It was designed to lower the verification risk to an acceptable level. The evidence-gathering plan thus specify the type and extent of evidence-gathering activities. /46/
- g. **Client Confirmation and Approval:** The site visit audit plan is sent to the client for review and confirmation/approval via email.
- h. **Document Review:** Relevant documents, such as the verification report, monitoring plan, methodology, GS4GG PDD and QA/QC procedures are thoroughly reviewed.
- i. **On-Site Assessment:** This includes interviews and evaluation of the actual project scenario. /38/
- j. **Resolution of Discrepancies:** Any non-conformities identified during the assessment are addressed and resolved.
- k. **Independent Review:** A technical reviewer provides an independent assessment.
- l. **Final Verification:** After completeness checks, the verification report and certification are issued.

The following sections outline each step in more detail.

2.1 Desk Review or Document Review

VKU Certification conducted a desk review or document as under;

During the document review, VKU has applied standard auditing techniques to assess the quality of information provided. The verification was performed primarily based on the review of monitoring report (MR) /19/ and emission reduction (ER) /20/ calculations spreadsheet were received from PDD /14/ and assessed along with the monitoring reports as part of the verification. In addition, the registered GS4GG PDD /14/ was also reviewed, for the baseline estimations and the monitoring plan.

As per section 9.3 and clause 9.3.2 of the GS4GG Validation and Verification standard version 1.0 /5/ the VVB shall assess the information provided by the Project Developer(s).

Document review involving:

- A review of the data and information presented to verify their completeness;
- 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.
- A review of calculations and assumptions made in determining the GHG data and emission reductions;
- An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions;

The complete list of documents reviewed is included under Section 4.

2.2 Site Visits (Onsite)

The project activity is located at Babsar Village of Sabarkantha District, Bhordu Village of Banaskantha District, Bilvaniya and Vantda Suka village of Aravalli District in the Gujarat state of India. Further the location along with longitude and latitude is mentioned in section 3.1.2. of this report. A site visit /38/ was undertaken by VKU Certification on **14/07/2023** as per the “GS4GG site visit and remote audit requirements and procedures” v 2.0 dated 30/05/2023 /6/ and “GS4GG applicability of minimum site visit requirement by VVB” dated 16/08/2021 v 2.0 /7/ and mentioned to carry out following;

- An assessment of the implementation and operation of the registered project activity as per the registered PDD /14/;
- A review of information flows for generating, aggregating, and reporting the monitoring parameters;
- Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the PDD /14/;
- A cross check between information provided in the monitoring report and data from other sources such as plant logbooks, JMRs /27/, Invoices /28/, PPA /30/ or other similar data sources listed in section 4;
- A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PDD, the applied methodology including applicable tool(s), and, where applicable, the applied standardized baseline;
- A review of calculations and assumptions made in determining the GHG data and emission reductions;
- An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters as per the VVS v1.0 clause 9.3.2.

Verification Team also confirm that there is no deviation(s) to address a non- compliance with the minimum site visit requirement as per the GS4GG applicability of minimum site visit requirement by VVB” dated 16/08/2021 v 2.0 /7/

Interview

An on-site inspection /38/ has been performed by the assessment team. Representatives of the PP and in-house O&M team were interviewed /41/ personally by assessment team on **14/07/2023** at Multiple Villages of three project implemented district in Gujarat state, India. Personnel responsible for monitoring of project activity, data collection, management, and QA/QC procedure were also interviewed. These tables outline the personnel involved in the interviews, along with their respective roles. The interviews specifically targeted individuals responsible for monitoring -of project activity, data collection, quality assurance and quality control (QA/QC) procedures.

Table no 12: Duration of Onsite Inspection: 14/07/2023					
S. NO	Name	Role	Gender	Location of Site	Activity Performed On-Site
1	Barun Kumar, Interviewer	Team Leader cum Technical Expert (TA 1.2)	Male	- Sabarkantha - Banaskantha -Aravalli	• An assessment of the implementation and operation of the GS4GG project activity as per the PDD • A review of information flows for generating, aggregating and reporting of the monitoring parameters. • Interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the Monitoring Plan • A cross-check between information provided in the MR and data from other sources • A check of the monitoring equipment including calibration performance, and observations of monitoring practices against the requirements of the PDD and the applied methodology • A review of calculations and assumptions made in determining the GHG data and ERs, and • An identification of QA/QC procedures in place to prevent, or identify and correct, any errors or omissions in the reported monitoring parameters

The topics covered during interview ranges from general features and implementation of project to technical details of the project like calibration, monitoring and measuring system, data collection, recording, emergency procedures internal audit, Procedures for handling non-conformances with the validated monitoring plan, personal training, and archiving procedures. The assessment was based on the feedback received during onsite interview coupled with the documentation in VKU.F64W.Field Assessment Checklist for Onsite Visit /42/. The tables serve to identify the individuals interviewed and provide relevant information regarding their roles within the project.

During Onsite Visit/38/, local stakeholders involved in the projects /41/ have been also interviewed to verify implementation of grievance mechanism and process of its resolution, as mentioned in the Monitoring report/19/. It also included confirmation of sustainable development claims and verification of the socio-economic impact made by the project on the local community. VKU also checked records and observed that the PP has provided opportunities for the locals to express their opinions and grievances. Project developer has put efforts to resolve issues through effective communication &

consultation with stakeholders. VKU could verify & confirm all the above statements via focussed group discussions and personnel interview/41/ with stakeholders. VVB has included the gender information of stakeholders included as per the requirements of 9.7.2 (e) of GS4GG as tabulated below:

Table no 13.1: Personnel Interview and Focussed Discussion with Site Personnel

S.No	Interviewee			Date	Subjects	Team Member Involved
	Name	Gender	Affiliation			
1	Sandeep Gahir	Male	JGSPL 45MW Senior Engineer	14/07/2023	1. Operation and maintenance Procedures, Calibration, JMR. 2. Local employment, trainings, 3. Monitoring of SDG parameters 4. Data archiving, breakdown details 5. O&M of the plant site and personnel responsible for monitoring of required monitored parameters and implementation of QA/QC Procedure. 6. Stakeholder meeting Employment opportunities, Standard of Livings etc.	Barun Kumar
2	Aditya Patel	Male	JGSPL 45MW Trainee			
3	Mumin Abbasali	Male	JGSPL 35MW Engineer			
4	Imtiyaz Chauhan	Male	JGSPL 35MW Senior Engineer			
5	Pradeep Ojha	Male	JGSPL 35MW Senior Executive			

Table no 13.2: Personnel Interview and Focussed Discussion with Local Stakeholder

S.no	Name	Gender	Category	Topic of Discussion
1.	Bhaya Bhai,Kamabhai	Male	Local Stakeholder-Villager	Execution of Project activity and its impact on the economic, social and environmental parameters on the local people of the area & around the situated project activity The ongoing communication procedure and the address of their grievance mechanism followed by the project proponent Scope and generation of employment in the locality due to the implementation of said project activity in the area. The ongoing trainings provided to the locals for self-employment.
2.	Bhimabhai, Udabhai	Male	Local Stakeholder-Villager	
3.	Nareshbhai, Parambhai	Male	Local Stakeholder-Villager	
4.	Shekh Mustak Ali	Male	Local Stakeholder-Villager	
5.	Rohit Prajapati	Male	Local Stakeholder-Villager	
6.	Jiger R. Dabhi	Male	Local Stakeholder-Villager	
7.	Kismat Chauhan	Female	Local Stakeholder-Villager	

VKU's Assessment Team in a form VKU.F46W. Attendance Sheet of audit /43/ wrote the names of personnel present during opening and closing meeting and those who were interviewed. Names of stakeholders were also recorded and there were no negative comments received during the stakeholder consultation interview /41/ conducted on site.

Verification Team confirms that there is no perceived or potential conflict of interest and provided complete list of the people interviewed during site visit, including information on the organization they represent are disclosed in public document by their consent.

2.3 Reporting of Findings

The objective of this step is to identify, discuss and conclude on the issues related to the monitoring, implementation and operations of the registered project activity that could impair the capacity of the registered project activity to achieve emission reductions or influence the monitoring and reporting of emission reductions. This is done based on the desk review and onsite assessment. The verification team prepares and/or updates a verification protocol (internal document) that records the conformities and non-conformities, which may be of following types;

As per GS VVS version 01 clause 6.3.14 CAR (Corrective Action Request) is raised if one of the following occurs:

1. The Project Developer(s) has made mistakes that will influence the ability of the proposed project to achieve real, measurable, verifiable and additional emission reductions/GHG Removals and SDG impacts (e.g., establishment of inaccurate baseline scenario(s), implementation of incorrect/inapplicable methodological steps and/or data and parameter

values for calculation of emission reductions and SDG impacts, adoption of erroneous estimations/assumptions for demonstration of additionality etc.);

2. The applicable GS4GG requirements and procedures have not been met (e.g., partial or complete non-compliance with applicable regulatory documents, e.g., local stakeholder engagement, safeguarding principles assessment and sustainable development impact assessment etc.);
3. There is a risk that GHG emission reductions and SDG impacts cannot be monitored or calculated. Clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable GS4GG requirements have been met.

Clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable GS4GG requirements have been met.

A Forward action request (FAR) is also raised in cases where any required deviation/information is not fulfilled in current verification and thus needs to be taken up in consequent verification for better transparency thus holding the applicability of the methodology eligible to the project activity and there is no impact of the same on additionality, baseline scenario & emission reduction calculation of project.

All CARs and CLs raised by the VKU Certification during verification shall be resolved prior to submitting a request for issuance.

In summary, **02 CLs**, **04 CARs** and **00 FAR** were raised during this verification which were closed successfully.

All the findings that were raised and communicated to project representative during the verification are included under Section 6. The section also includes the response, if provided, by the project participants and an assessment by the verification team if it was closed out or otherwise.

2.4 Technical Review

A draft verification report that is prepared by verification team is reviewed by an independent technical review team (one or more members) to confirm if the internal procedures established and implemented by VKU Certification were duly complied with and such opinion/conclusion is reached in an objective manner that complies with the GS4GG rules and requirements. The technical review team is collectively required to possess the technical expertise of all the technical area/sectoral scope the project activity relates to. All team members of technical review team are independent of the verification team.

During the technical review process additional findings may be identified or the closed-out findings may be opened, which needs to be satisfactorily resolved before the request for issuance is submitted to GS4GG. The independent technical reviewer may either approve the report as such or reject/return the same in such case providing the comments/findings/issues that needs to be resolved by the verification team. The decision taken by the Technical Reviewer is final and is authorized by the Managing Director on behalf of VKU Certification Private Limited.

3. VERIFICATION FINDINGS

This section summarises the findings from the verification of the emission reductions reported for the 120 MW Solar PV Plant by Juniper Green Sigma Private Ltd. in Gujarat for the monitoring period 01/01/2023 – 30/06/2023 (inclusive of both the days).

The project has exclusively applied for registration under the Gold Standard (GS) with ID: 7572. This sole registration status has been confirmed through rigorous scrutiny of the Gold Standard registry website. A similar comprehensive search was conducted across the CDM (Clean Development Mechanism), VCS (Verified Carbon Standard), GCC (Global Carbon Council) and UCR (Universal Carbon Registry) etc registries, using matching project titles and capacity, as well as Project Proponent details. This diligent examination did not yield any instances of the project being registered under any of the aforementioned registries or any comparable mechanisms

Verification through Declaration:

The Project Developer (PD) has substantiated this single-registration claim through the declaration /32/ submitted, affirming that the GHG emission reductions achieved by the project during the current monitoring period will not be sought or claimed under any other registries apart from GS.

Cross-Verification of GHG Benefits:

An independent search was also conducted to ascertain whether the project had been registered or claimed for other GHG-related benefits, such as Renewable Energy Certificates (RECs) and International Renewable Energy Certificates (I-RECs). This thorough assessment, coupled with the declaration submitted by the PP, corroborates that there is no double counting of GHG benefits arising from this project activity for the current monitoring period.

The project's non-rejection status by other GHG programs has also been confirmed through a meticulous assessment. A declaration /32/ attesting to this fact was duly verified and found to be accurate by the assessment team. Additionally, an independent verification process was initiated with other relevant registries, which substantiated that there were no instances of project rejection by these entities.

In conclusion, the project's exclusive registration under GS for the current monitoring period, along with its absence from rejection lists of other GHG programs, has been comprehensively verified, ensuring the integrity and credibility of its GHG benefits claims. Details of the registries checked are as follows:

- 1) <https://www.recregistryindia.nic.in/>
- 2) <http://cdm.unfccc.int/>
- 3) [Verra Search Page](#)
- 4) [I-REC Standard - The International REC Standard Foundation \(irecstandard.org\)](http://irecstandard.org)
- 5) <https://cri.nccf.in/>
- 6) [International Carbon Registry - International Carbon Registry](#)
- 7) [GCC PROJECTS PORTAL \(globalcarboncouncil.com\)](http://globalcarboncouncil.com)
- 8) <https://biocarbonregistry.com/en/projects/>
- 9) https://wilder.earth/social_carbon
- 10) <https://www.ucarbonregistry.io/>
- 11) <https://www.ecoregistry.io/>
- 12) <https://www.carbonregistry.com/explore/projects>

13) https://wilder.earth/social_carbon

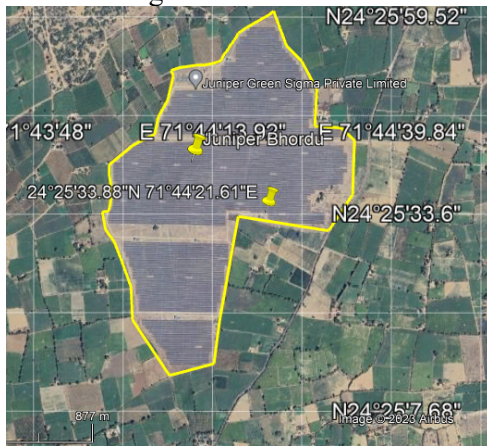
14) <https://www.ecoregistry.io/>

3.1 Description of project

3.1.1 General description of project

Verification Means	Means: During desk review and Onsite Inspection Activity Performed: The assessment team verified MR version 1.0 dated: 13/07/2023, & final MR version 2.2 dated 23/01/2024 /19/, PDD version 6.0 dated: 11/01/2021, with the GS4GG PDD & further with supporting documents submitted by the PD i.e., Last Verification Report /16/, Validation Report /15/ Commissioning certificates /21/ Power Purchase Agreement /30/ etc
Findings	CL#01 AND CAR#01 were raised and resolved, please refer Section 06 for detailed analysis of the finding raised.
Conclusions	Verification is done in accordance with the registered PDD. General description of the project was verified via Commissioning certificates, PPA. Since all data was verified thoroughly, the Assessment Team can ascertain that the description of the project mentioned is in line with GS4GG standards Version 1.0. and Principle and Requirements v1.2.

3.1.2 Location of Project

Verification Means	Means: During desk review and Onsite Inspection Activity Performed: The assessment team verified MR version 1.0 dated: 13/07/2023, & final MR version 2.2 dated 23/01/2024 /19/, with the GS4GG PDD & further with supporting documents submitted by the PD i.e., Last Verification Report /16/, Validation Report /15/, O & M Agreement /29/, Power Purchase Agreement /30/ etc. Assessment Team used GPS Map Camera: Geotag Photos & Add GPS Location / 39/ during site visit to confirm the location and geo-tagged the evidences collected/recorded during on-site visit, also during desk-review, team employed Google Earth Pro Software /40/ to confirm if the site to be visited is actually installed and reflected at the geo-coordinates defined in the registered PDD.
	
Findings	CAR#01 was raised and resolved, please refer Section 06 for detailed analysis of the finding raised.

Conclusions	Verification is done in accordance with the registered monitoring plan and was verified using Google earth pro during desk review and via GPS Map Camera app during on-site visit. Since, 100% data was verified, the assessment team can ascertain that the location of project mentioned is correct and in compliance.
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3.1.3 Reference of applied methodology

Verification Means	Means: During desk review and Onsite Inspection Activity Performed: The assessment team verified MR version 1.0 dated: 13/07/2023 & final MR version 2.2 dated 23/01/2024 & ER Sheet/20/, with registered GS4GG PDD version 6.0 dated: 11/01/2021/14/ & applied methodology ACM0002 Version 20.0 as this a large-scale solar project. /12/
Findings	CAR 01- was raised and was further closed successfully, please refer Section 06 for detailed analysis of the finding raised.
Conclusions	Verification is done in accordance with the registered PDD and applied methodology ACM0002 Version 20.0 as this a large-scale solar project. Since data mentioned in MR was verified thoroughly via registered PDD, the assessment team can ascertain that the description of the methodology used in the project mentioned is in line with GS4GG standards. The link provided for the reference of the applied methodology was incorrect which was further updated by the PD.

3.1.4 Crediting period of Project⁵

Verification Means	Means: During desk review and Onsite Inspection Activity Performed: The assessment team verified MR version 1.0 dated: 13/07/2023 & final MR version 2.2 dated 23/01/2024/19/, with registered GS4GG PDD version 6.0 dated: 11/01/2021/14/ & further with supporting documents submitted by the PD i.e., Last Verification Report /16/, Validation Report /15/
Findings	CAR 01- was raised and was further closed successfully, please refer Section 06 for detailed analysis of the finding raised.
Conclusions	Verification Team assessed that this is the 1st crediting period of the given project activity i.e., from 17/10/2020 to 16/10/2025 (Length of 5 years and renewable). This was verified via registered PDD and GS impact registry. Based on this, it can be concluded that crediting period start date and its length is correct and is in line with GS4GG VVS/5/, GS4GG principles and requirements /1/.

3.2 Remaining Issues (FAR(s) from validation or previous verification)

This is fifth verification of the project activity. Based on the review of the previous Verification Report /16/ & previous verification performance review feedback, assessment team confirms that as per FAR was raised during last performance review no 04. The assessment team confirms that the project has already completed verification for calendar year 2022 therefore annual report for the same is not required in line with the GS4GG Principal & Requirement and Annual Report for calendar year 2023

⁵ The Crediting Period has been considered from the date of Design Certification of the project. The same can be referred by the registered PDD version 6.0 dated 11/01/2021

is due till December, 2024, However, the PD has submitted the Annual Report for previous calendar year in the SustainCert Portal. Therefore, this FAR has been closed.

3.3 Post registration changes

Type of change(s)	Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline
Description of change(s)	N/A
Assessment of change(s)	N/A
Opinion on change(s)	N/A

Type of change(s)	Corrections																																																																				
Description of change(s)	The estimated value of Parameter $EG_{\text{facility}, y}$ i.e. Quantity of net electricity supplied to the grid reported under SDG 7 in section B.7.1 of the registered GS PDD version 6.0 dated 11/01/2021 was mistakenly considered without using the degradation factor (0.70%). However, the baseline emission (BE_y) was calculated using the degradation factor, but the same has been reported erroneously (typographical error). The correct value of ER estimation can be referred from the ER sheet approved at the time of design certification. PP is requesting corrections during the current MP to revise the estimated value Parameter $EG_{\text{facility}, y}$ and parameter BE_y. The calculation table for the same has also been updated in line with the ER sheet. Please note that the correction is only related to reporting the parameters in the PDD and it does not affect the additionality, applicability of methodology and registered monitoring plan of the project as the correct values were reported in the IRR and ER sheet at the time of Design Certification. SDG 7: Affordable and Clean Energy <table><tr><th>Year</th><th>Baseline Estimate</th><th>Project Estimate</th><th>Net Benefit</th></tr><tr><td>Year 1</td><td>0</td><td>2,98,120</td><td>2,98,120</td></tr><tr><td>Year 2</td><td>0</td><td>2,93,961</td><td>2,93,961</td></tr><tr><td>Year 3</td><td>0</td><td>2,91,903</td><td>2,91,903</td></tr><tr><td>Year 4</td><td>0</td><td>2,89,860</td><td>2,89,860</td></tr><tr><td>Year 5</td><td>0</td><td>2,87,831</td><td>2,87,831</td></tr><tr><td>Total</td><td>0</td><td>1,461,675</td><td>1,461,675</td></tr><tr><td>Total number of crediting years</td><td colspan="3">5 Years</td></tr><tr><td>Annual average over the crediting period</td><td>0</td><td>292,335</td><td>292,335</td></tr></table> SDG 13: Climate Action <table><tr><th>Year</th><th>Baseline Estimate</th><th>Project Estimate</th><th>Net Benefit</th></tr><tr><td>Year 1</td><td>2,80,799</td><td>0</td><td>2,80,799</td></tr><tr><td>Year 2</td><td>2,76,881</td><td>0</td><td>2,76,881</td></tr><tr><td>Year 3</td><td>2,74,943</td><td>0</td><td>2,74,943</td></tr><tr><td>Year 4</td><td>2,73,019</td><td>0</td><td>2,73,019</td></tr><tr><td>Year 5</td><td>2,71,108</td><td>0</td><td>2,71,108</td></tr><tr><td>Total</td><td>1,376,750</td><td>0</td><td>1,376,750</td></tr><tr><td>Total number of crediting years</td><td colspan="3">5 Years</td></tr></table>	Year	Baseline Estimate	Project Estimate	Net Benefit	Year 1	0	2,98,120	2,98,120	Year 2	0	2,93,961	2,93,961	Year 3	0	2,91,903	2,91,903	Year 4	0	2,89,860	2,89,860	Year 5	0	2,87,831	2,87,831	Total	0	1,461,675	1,461,675	Total number of crediting years	5 Years			Annual average over the crediting period	0	292,335	292,335	Year	Baseline Estimate	Project Estimate	Net Benefit	Year 1	2,80,799	0	2,80,799	Year 2	2,76,881	0	2,76,881	Year 3	2,74,943	0	2,74,943	Year 4	2,73,019	0	2,73,019	Year 5	2,71,108	0	2,71,108	Total	1,376,750	0	1,376,750	Total number of crediting years	5 Years		
	Year	Baseline Estimate	Project Estimate	Net Benefit																																																																	
	Year 1	0	2,98,120	2,98,120																																																																	
	Year 2	0	2,93,961	2,93,961																																																																	
	Year 3	0	2,91,903	2,91,903																																																																	
	Year 4	0	2,89,860	2,89,860																																																																	
	Year 5	0	2,87,831	2,87,831																																																																	
	Total	0	1,461,675	1,461,675																																																																	
	Total number of crediting years	5 Years																																																																			
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Year	Baseline Estimate	Project Estimate	Net Benefit																																																																		
Year 1	2,80,799	0	2,80,799																																																																		
Year 2	2,76,881	0	2,76,881																																																																		
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Year 4	2,73,019	0	2,73,019																																																																		
Year 5	2,71,108	0	2,71,108																																																																		
Total	1,376,750	0	1,376,750																																																																		
Total number of crediting years	5 Years																																																																				

	Annual average over the crediting period	275,350	0	275,350
Assessment of change(s)	The above stated corrections are assessed by VVB during the assessment stage and thus it is to confirm that annual average values for estimation for both net electricity generation & emission reductions are now correctly used while calculating the emission reductions for the current monitoring.			
Opinion on change(s)	VVB's opinion is positive on the above requested correction by the PD and it is to conform that above stated correction will only result in the accurate estimation of emission reductions for a given time frame/current monitoring period and it doesn't affect the additionality and baseline scenario of the implemented project activity.			

Type of change(s)	Changes to the start date of the crediting period
Description of change(s)	N/A
Assessment of change(s)	N/A
Opinion on change(s)	N/A

Type of change(s)	Permanent changes from the design Certified registered monitoring plan, applied monitoring methodology or standardized baseline
Description of change(s)	N/A
Assessment of change(s)	N/A
Opinion on change(s)	N/A

Type of change(s)	Changes to the project design of approved project activity
Description of change(s)	N/A
Assessment of change(s)	N/A
Opinion on change(s)	N/A

3.4 Description of monitoring system applied by the project

Project entails installation & operation of 120 MW (AC) grid connected solar photovoltaic power plant. The monitoring plan has been crafted in alignment with the guidelines and processes established for the GS4GG project in Gujarat, India, specifically for grid-connected solar power projects.

As per registered PDD the project activity is anticipated to operate with a plant load factor of 28.36%, which enables it to export **292,335 MWh** of electrical energy annually to the Unified Indian grid. This, in turn, leads to an average annual reduction of **275,350 metric tons of carbon dioxide (tCO₂e)** per year stemming from the project's operations. It's worth noting that the project activity does not entail any technology transfer.

Table No 14: Commissioning dates for the project activity

S.No.	Organization name	Location	Capacity (AC)	Date of Commissioning
1	Juniper Green Sigma Private Limited	Village Bilvaniya, Vantda Suka, Tal–Dhansura, Dist.- Aravali	25 MW	17/10/2020
2		Village Babsar, Tal-Vadali, Dist.-Sabarkantha	25 MW	19/10/2020
3			10 MW	28/11/2020
4		Village Bilvaniya, Vantda Suka, Tal–Dhansura, Dist.- Aravali	20 MW	28/11/2020
5		Village-Bhordu, Tal-Tharad, Dist.- Banaskantha	25 MW	09/12/2020
6			15 MW	17/12/2020

Table no 15: Technical specifications /22/

Capacity	25 MW (AC) / 36.247 MW (DC)
SPV Modules – Type/make	Monocrystalline / Trina Solar
No. of Photovoltaic Modules / Rating	72492 / 405 Wp, 16800 / 410 Wp
Inverters – Type/make	String/Sungrow
No. of Inverter / Rating	125 /200 KW
ABT Meter – Make / Serial No.	Secure / GJ-4608 - A
Name of Substation	66 kV GETCO Substation, Khadol

Capacity	25 MW (AC) / 36.41 MW (DC)
SPV Modules – Type/make	Monocrystalline / JA Solar & Trina Solar
No. of Photovoltaic Modules / Rating	52192 / 405 Wp, 19656 / 410 Wp & 3640 / 405 Wp, 14000 / 410 Wp
Inverters – Type/make	String/Sungrow
No. of Inverter / Rating	125 /200 KW
ABT Meter – Make / Serial No.	Secure / GJ-4585 - A
Name of Substation	66 kV GETCO Substation, Babsar

Capacity	10 MW (AC) / 14.696 MW (DC)
SPV Modules – Type/make	Mono PERC / JA Solar & Trina Solar
No. of Photovoltaic Modules / Rating	36288 / 405 Wp
Inverters – Type/make	String/ Sungrow
No. of Inverter / Rating	50 /200 KW
ABT Meter – Make / Serial No.	Secure / GJ-4585 - A
Name of Substation	66 kV GETCO Substation, Babsar

Capacity	20 MW (AC) / 29.459 MW (DC)
SPV Modules – Type/make	Mono PERC / Trina Solar
No. of Photovoltaic Modules / Rating	50064 / 405 Wp, 22400 / 410 Wp
Inverters – Type/make	String/ Sungrow
No. of Inverter / Rating	100 /200 KW
ABT Meter – Make / Serial No.	Secure / GJ-4608 - A
Name of Substation	66 kV GETCO Substation, Khadol

Capacity	25 MW (AC) / 36.541 MW (DC)
SPV Modules – Type/make	Mono PERC / JA Solar
No. of Photovoltaic Modules / Rating	71092 / 405 Wp, 18900 / 410 Wp
Inverters – Type/make	String/ Sungrow
No. of Inverter / Rating	125 /200 KW
ABT Meter – Make / Serial No.	Secure / GJ-4605 - A
Name of Substation	66 kV GETCO Substation, Bhordu

Capacity	15 MW (AC) / 21.86 MW (DC)
SPV Modules – Type/make	Mono PERC / JA Solar
No. of Photovoltaic Modules / Rating	36260 / 405 Wp, 17500 / 410 Wp
Inverters – Type/make	String/ Sungrow
No. of Inverter / Rating	75 /200 KW
ABT Meter – Make / Serial No.	Secure / GJ-4605 - A
Name of Substation	66 kV GETCO Substation, Bhordu

This plan provides details about the organization responsible for monitoring, the parameters to be observed, the monitoring methods, quality assurance measures, quality control procedures, as well as how data will be stored and archived. The primary authority and accountability for tasks such as data registration, monitoring, measurement, reporting, and data review lies with the (PD).

- **Site In charge (PD) Duties:** The Site In charge is responsible for overseeing the overall operation and maintenance of the project. They work in coordination with the in-house O&M operator and site supervisors.
- **Site In-charge (In house O&M Operator) Responsibilities:** The Site In-charge from the O&M Operator's side is accountable for maintaining data records, ensuring data completeness and reliability (including equipment calibration), and recording data for all monitored parameters.
- **Shift In-charge Responsibilities:** The Shift In-charge is responsible for daily data collection and the maintenance of day-to-day monitored data, such as meter readings and training records.
- **Data Archiving Policy:** All monitored data is electronically archived for a period of two years after the conclusion of the crediting period or the last issuance of Verified Emission Reductions (VERs), whichever comes later.

Data Measurement: The continuous measurement of exported and imported energy is carried out using the aforementioned primary and secondary meters located at the GETCO substation located at following locations: -

Table no 16: Location of Substation

Capacity (MW _{AC})	Substation	Location
45 MW	66kV Khadol S/s	Village - Gadh Akot, Bilyanthya and Vantda Suka, Tehsil – Dhansura, Dist.- Aravali
35 MW	66kV Babsar S/s	Village - Babsar, Tehsil – Vadali, Dist.- Sabar kantha
40 MW	66kV Bhordu S/s	Village - Bhordu, Tehsil – Tharad, Dist.- Banas kantha

Export and Import readings from the primary and secondary meters will be conducted on a monthly basis by an authorized officer from SEB (Gujarat Urja Vikas Nigam Limited) in the presence of the representative of the Project Developer (PD). These readings are taken jointly and signed by both SEB and PP representatives. The PD or its representative will then use these readings to generate monthly invoices/bills /28/. These invoices/bills serve as a means to cross-check the meter readings for the project.

It's important to note that while the project owner or their representatives are present during meter readings, the calculation of net electricity supplied to the grid is entirely within the jurisdiction of GUVNL (Gujarat Urja Vikas Nigam Limited). The project owner has no control over this calculation. The project owner receives a monthly Joint Meter Readings (JMRs) from the State Electricity Board, which provides the net electricity supplied to the grid, and this is used for emission reduction calculations. Emission reductions are calculated by multiplying the net electricity generation ($EG_{PJ, y}$) with the combined margin grid emission factor ($EF_{CM, y}$).

Data collection and archiving: The export and import readings from the main and check meters will be collected under the supervision of the in-house O&M team or authorized representatives of the PD. Export and import data will be recorded and stored electronically and/or on paper. The records are periodically reviewed by the Head of Operations and thoroughly discussed with the in-house O&M team. The monitored data will be stored for a period of two years after the conclusion of the crediting period or until the last issuance of GS(VERs) for the project activity, whichever occurs later.

Emergency Preparedness: The project ensures no unexpected emissions due to its activities and doesn't anticipate the need for emergency data monitoring preparedness. In the rare instance of Main or Check

meter failure beyond acceptable accuracy or functionality, immediate repair, recalibration, or replacement is guaranteed. If the Main meter is unavailable due to maintenance, the Check meter will be used for readings. If both Main and Check meters are unavailable, the Standby meter will be utilized. Throughout the monitoring period, all meters operated within acceptable accuracy limits at the site. VVB confirmed this during site visit/38 to the project implemented site by physically inspecting the energy meters installed at the substations and by interviewing the personnels at substation and site in charge.

Staff training /24/ is a crucial component to ensure the effective operation of the project activity and the accurate monitoring of emission reductions. Plant assistants have undergone comprehensive training in various areas, including equipment operation, data recording, report writing, operation and maintenance, as well as emergency procedures, all in accordance with the monitoring plan. During this monitoring period, the following training sessions have been conducted:

1. Electrical safety training
2. Material handling training
3. In-House O&M (Operations and Maintenance) training
4. Road safety training

During this current monitoring period PD conducted and inclusive training program of the site personnel at the site. Total No. of Trainings given to the employees during current monitoring period of 181 days are **23 Training**. The PD submitted training records to the VVB which confirm the participation of employees in training programs arranged at the site. VVB also confirmed during the onsite visit about the training programs by confirming the same during personnel interview and focussed group discussions. The list of trainings is provided below:

Table no 17: Details of trainings conducted during current MP

Khadol site: -

During reported monitoring period total 11 employees attended the trainings provided by the PD at Khadol site. The details of the training are mentioned below;

S. No	Date	Topic of training	No. of Attendees
1.	23/01/2023	Road Safety Training	4
2.	17/02/2023	PPEs Training	3
3.	21/02/2023	Section 111A Training	5
4.	23/03/2023	National Safety video demonstration video training	5
5.	29/04/2023	Fire Safety Training	7
6.	12/06/2023	Waste Management	3
7.	10/08/2023	Electrical Safety Training	4
8.	11/09/2023	Special EHS Training (Electrical Safety, LOTOTO (Lock-out, tag-out, try-out), BBS (Behavior based safety, Emergency Response, CEA)	5

Babsar site: -

During reported monitoring period total 13 employees attended the trainings provided by the PD at Babsar site. The details of the training are mentioned below;

S. No	Date	Topic of training	No. of Attendees
1.	21/01/2023	Road Safety Training	4
2.	05/02/2023	PPEs Training	5
3.	22/02/2023	Section 111A Training	4
4.	20/03/2023	National Safety video demonstration video training	4
5.	22/04/2023	Fire Safety Training	4
6.	26/05/2023	Section 111A Training	1
7.	09/06/2023	Rear Parking Training	4
8.	16/06/2023	Training on Battery server room	3
9.	21/06/2023	Height work on IDT transformer	3
10.	09/08/2023	Electrical Safety Training	4
11.	12/09/2023	Special EHS Training (Electrical Safety, LOTOTO, BBS, Emergency Response, CEA)	5
12.	18/09/2023	5S Training	4

Bhordu site: -

During reported monitoring period total 09 employees attended the trainings provided by the PD at Bhordu site. The details of the training are mentioned below;

S. No	Date	Topic of training	No. of Attendees
1	5/01/2023	PTW (Permit to Work) Training	5
2	20/01/2023	Road Safety Training	6
3	23/02/2023	Section 111A Training	4
4	25/02/2023	PPEs Training	4
5	27/03/2023	National Safety video demonstration video training	6
6	24/04/2023	Fire Safety Training	4
7	25/05/2023	Emergency Response Training	4
8	26/05/2023	Section 111A Training	3

3.4.1 Compliance of monitoring plan with monitoring methodology

The verification team confirms that the monitoring plan and the monitoring system implemented are in compliance to the applied monitoring methodology ACM0002, version 20.0 /12/ All other requirements of the applied methodology are met.

During the verification all relevant monitoring parameters (as listed in the GS4GG PDD/14/) have been verified with regard to the appropriateness of the applied measurement/determination method, the correctness of the values applied for ER calculation, the accuracy, and applied QA/QC measures.

Opinion: The monitoring mechanism is in line with the methodology and is effective and reliable. The monitoring plan mentioned in the GS4GG PDD/14/ is in line with the applied methodology i.e. — ACM0002, version 20.0 /12/ and approved standardized baseline that is applied by the registered GS4GG project activity PDD /14/.

3.4.2 Compliance of monitoring activities with the registered Monitoring plan

3.4.2.1 Data and Parameters fixed ex-ante or at renewal of crediting period

Verification Means	Means: During desk review and Onsite Inspection Activity Performed: The assessment team verified MR version 1.0 dated: 13/07/2023 & final MR version 2.2 dated 23/01/2024 /19/, with GS4GG/PDD/14/version 6.0 dated: 11/01/2022.																		
Findings	CAR 03- was raised and was further closed successfully, please refer Section 06 for detailed analysis of the finding raised.																		
Conclusions	Details of ex-ante parameters <table border="1"> <thead> <tr> <th>Parameter</th><th>Unit</th><th>Description</th><th>Value</th></tr> </thead> <tbody> <tr> <td>EF_{OM, y}</td><td>tCO₂e/MWh</td><td>Operating Margin CO₂ emission factor in year y</td><td>0.9622</td></tr> <tr> <td>EF_{BM, y}</td><td>tCO₂e/MWh</td><td>Build Margin CO₂ emission factor in year y</td><td>0.8811</td></tr> <tr> <td>EF_{CM, y}</td><td>tCO₂e/MWh</td><td>Combined Margin CO₂ emission factor in year y</td><td>0.9419</td></tr> </tbody> </table> Verification is done in accordance with the registered PDD and applied methodology ACM0002 Version 20.0 /12/. The values are obtained from the CO₂ Baseline Database for Indian Power Sector” version 15.0, /13/ published by the Central Electricity Authority, Ministry of Power, Government of India as mentioned in MR /19/ and verified as per registered PDD /14/. Assessment Team has cross verified the CEA database /13/ and confirmed the same with registered PD, hence the above ex-ante parameters and their values are in-line with the registered PDD.			Parameter	Unit	Description	Value	EF _{OM, y}	tCO ₂ e/MWh	Operating Margin CO ₂ emission factor in year y	0.9622	EF _{BM, y}	tCO ₂ e/MWh	Build Margin CO ₂ emission factor in year y	0.8811	EF _{CM, y}	tCO ₂ e/MWh	Combined Margin CO ₂ emission factor in year y	0.9419
Parameter	Unit	Description	Value																
EF _{OM, y}	tCO ₂ e/MWh	Operating Margin CO ₂ emission factor in year y	0.9622																
EF _{BM, y}	tCO ₂ e/MWh	Build Margin CO ₂ emission factor in year y	0.8811																
EF _{CM, y}	tCO ₂ e/MWh	Combined Margin CO ₂ emission factor in year y	0.9419																

3.4.2.2 Data and Parameters monitored

Verification Means	Means: During desk review and Onsite Inspection Activity Performed: The assessment team verified MR version 1.0 dated: 13/07/2023 & final MR version 2.2 dated 23/01/2024 /19/, PDD version 6.0 dated: 11/01/2021/14/, and other supporting documents i.e., Calibration Records /31/, JMRs /27/, Invoices /28/, Employment Records /25/, Training Records /24/ & State Energy Account based on availability-based Tariff (ABT) /33/ for the current Monitoring Period.			
Findings	CAR 03- was raised and was further closed successfully , please refer Section 06 for detailed analysis of the finding raised.			
Conclusions	Details of monitored parameter			
	Parameters	Source	Value Applied	Purpose of Data

	EG _{facility,y}	Monthly joint meter reading report/24/.	160,663.78 MWh	To Monitor the SDG 7 Indicator
	ER _y	The baseline emissions are the product of electrical energy baseline EG _{facility,y} expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor.	151,329 tCO _{2e}	To Monitor the SDG 13 Indicator
	Quantitative employment, Quality of employment, Income generation	Training Records (HSE & HR) Salary Slip of the project employees.	19 Employees 23 Trainings 39,48,968 INR income generation	To Monitor the SDG 8 Indicator

SDG Indicator 7.2: Affordable and Clean Energy

EG_{facility,y}: Quantity of net electricity supplied by the project plant/unit to the grid in year y (MWh)

The parameter is derived by calculating the variance between the export and import values, which are measured using a tri-vector meter. Additionally, this parameter aligns with the recorded net generation values documented in the State Energy Account on a monthly basis by GETCO SLDC. Furthermore, this parameter is an integral part of the invoices submitted by JGSPL to GUVNL and is consistent with what was outlined in the registered Project Design Document (PDD).

The assessment team meticulously reviewed the value of net electricity exported, as calculated from the State Electricity Account (SEA) records, and confirmed its accuracy. The net electricity supplied to the grid matched the details provided in the invoice statements and was deemed correct. **Hence, the value of 160,663.78 MWh**, as specified in MR version 2.1 and the emission sheet, is validated as accurate and complies with the stipulations outlined in Para 364 and 395 (e) of the "CDM validation and verification standard for project activities, Version 03.0."

Additionally, the assessment team scrutinized the Joint Monitoring Reports (JMRs) issued by the State Utility. They also cross-checked the power exported values with the invoices submitted by the Project Developer (PD) and found them to be in line with the JMRs issued. Calibration of the meter is conducted at three-year intervals, and the most recent calibration is still applicable. This calibration procedure aligns

with the provisions set forth in Para 369 and 370 of the "CDM validation and verification standard for project activities, Version 03.0."

The Energy meters used to record the values of export/import are of accuracy class 0.2s are used to measure the net electricity generated. The assessment Team physically inspected the energy meters installed at site and verified the Serial numbers and confirmed the authenticity of the meter details.

The meters are calibrated **Once in every three year** and the calibration of the meters are verified from calibration certificates provided /31/. During physical inspection of the site, the assessment team also interviewed the site in-charge and confirmed the calibration details. It is to note that calibration is under the purview of state electricity board i.e., Gujarat Urja Vikas Nigam Limited (GUVNL).

Assessment team during desk review observed that value of net electricity generated is wrongly calculated. This finding was raised as a CAR#03 and further it was successfully resolved when the obligatory corrective actions were taken by PD in the MR supported along with required evidences.

Since 100% data was verified, the assessment team can ascertain that the values for the emission reductions calculated are accurate.

SDG Indicator SDG 8.5.1: Decent Work and Economic Growth

The parameter under consideration is the average hourly earnings of both female and male employees, categorized by occupation, age, and individuals with disabilities.

- Regarding quantitative employment and income generation, this involves tracking the number of project employees, their gender, employment type (permanent/temporary), age, disability status, and the salaries paid to them. The parameter is determined by the total number of individuals employed directly as a result of the project's activities, and it takes into account the improved salary provided to these employees, during the current monitoring period.
- In this specific case, the data reveals that there was a total of 19 employees during this monitoring period. This workforce consisted of 19 skilled employees in permanent positions and 0 semi-skilled employees in temporary roles. The total salary disbursed to these employees amounted to **INR 39,48,968**. The assessment team found this information acceptable and verified it using the salary slips/offer letters, Training Attendance sheets & Employee Records submitted.
- PD has submitted declaration /29/ regarding the income generated during current monitoring period which states that this project is not opted for any third-party O&M and following practices of carrying out same internally as and when required. The cost incurred biannually (01/01/2023 - 30/06/2023) towards income paid to all the employees is INR 39,48,968.
- It is to confirm that in VVB has assessed the total income generation stated by the PD in the monitoring report and the emission reduction sheet is INR 39,48,968 for current monitoring period of six months i.e., (01/01/2023 to 30/06/2023)

is a cumulative value for the 19 permanent skilled employees working at the solar plant site as there is no permanent unskilled employee at site but contractual unskilled workers who get daily wage.

- VVB established a check for SDG 08; “Relevant SDG Indicator SDG 8.5.1: Decent Work and Economic Growth with the labour laws released by the central government of India, i.e., the <https://clc.gov.in/clc/node/684> . As per the order from the Office of the Chief Labour Commissioner, Govt. of India dated 28/10/2021 (File No. 1/26(1)/2021 – LS-II), All the unskilled workers employed in C Area are required to be paid minimum.

Serial Number	Type of Employee	Minimum Wage as per Chief Labour Commissioner, Govt. of India dated 28/10/2021 (File No. 1/26(1)/2021 – LS-II)
1	Unskilled	437 INR per day
2	Semi-skilled	512 INR per day
3	Skilled	617 INR per day

- To confirm the compliance of the above stated labour laws with the amount disbursed to the employees at site VVB cross-checked the sample employment contracts/offer letters voluntarily shared by the PD that confirms that the skilled employees are compensated above the required wage as specified by the central government of India i.e., 617 INR per day. It is to note the salary received by the skilled employees is differential in nature and due to confidentiality issues the salary cannot be disclosed, however to establish an overall calculation for average wage received by an employee at site is INR 1,148 which is higher than as specified by the central government of India.
- For unskilled workers working at a daily wage at the plant site PD shared wage register of the daily wage disbursed to them that confirms that employees are compensated INR 450 which is above the required wage as specified by the central government of India i.e., 437 INR per day thus ensuring an overall financial wellbeing of the employees employed at the solar plant site along with adherence to the SDG 08 implementation with the installation and function of the solar plant.

Further keeping in line with GS requirements for SDG 08, VVB confirms this that no new employees were hired during this monitoring period, hence PD cannot establish a comparison for the same with reference to the central government labour laws. Hence keeping the same in mind the adherence to the already working employees have been provided and VVB has cross-checked the documents i.e., Salary Expense Declaration, Offer letters & Wage Register submitted by the PD. PD has submitted a declaration /29/ regarding the same that the figure (INR 39,48,968) is not inclusive of any O & M cost (since they have an in-house O & M procedure), it is solely the salary provided to skilled

	employees and INR here signifies the total income generated for skilled employees. SDG Indicator 13.2.1: Climate Action Urgent measures must be taken to address the challenges posed by climate change and its consequences on consumption. 2. In terms of air quality, the reduction in carbon dioxide (CO₂) emissions resulting from the implementation of the project activity is measured in tCO₂e (metric tons of CO₂ equivalent). This parameter is computed by multiplying the baseline electrical energy (EG_{facility,y}) expressed in MWh (megawatt-hours) of electricity generated by the renewable power unit by an appropriate emission factor. The calculation is clearly presented in the Emission Reduction Sheet, and it indicates that the emission reduction achieved during the current monitoring period is 151,329 tCO₂e. The assessment team has reviewed this information and confirmed its accuracy. Consequently, the emission reduction calculation is considered correct and in compliance with the necessary standards SDG Indicator // Safeguarding principle 4.3.5: Hazardous and Non-hazardous waste The parameter in question pertains to the monitoring of the production, trade, release, and utilization of both hazardous and non-hazardous chemicals and/or materials. The VVB (Validation and Verification Body) team has conducted a thorough examination and confirmed that no hazardous waste or waste oil was generated or disposed of, and there were no instances of spillages or leaks of diesel or waste oil during the monitoring period. This verification process involved referencing plant records, declarations from the Human Resources department (HR), and statements from the Project Participant (PP). Additionally, employee interviews were conducted during a remote audit as part of the verification procedure.
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3.4.2.3 Implementation of Sampling Plan

Verification Means	N/A
Findings	N/A
Conclusions	N/A

3.4.3 Compliance with the calibration frequency requirements for measuring instruments

Verification Means	Means: During desk review and Onsite Inspection Activity Performed: The assessment team verified MR version 1.0 dated: 13/07/2023 & final MR version 2.2 dated 23/01/2024 /19/, PDD version 6.0 dated: 11/01/2021/14/, and other supporting documents i.e., Calibration Records /31/ applicable for the current Monitoring Period.
Findings	CL 01- was raised and was further closed successfully, please refer Section 06 for detailed analysis of the finding raised.
Conclusions	Verification is done in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.

Calibration is performed once in every three years as per registered PDD /14/ and PPA /30/. Calibration frequency was cross verified via calibration certificates and was found to be in line with the registered PDD /14/ and PPA /30/.

Calibration is conducted by State Electricity Board and Calibration records are maintained at the plant. The data is cross-verified against values of sold electricity in the joint meter reading statement issued by the Gujarat Urja Vikas Nigam Limited (GUVNL). The meter is in control and supervision of GUVNL and are calibrated only as and when GUVNL so desires.

Calibration is performed by an NABL accredited Laboratory i.e., Hi-Tech Meter Laboratory with Certificate Number: CC-2504 /31/

The metering system comprises of main and check meter. In the event that the main metering system is not in service due to maintenance, repair or testing, the reading is obtained from the check meter. During assessment it was verified that PD has not provided calibration certificate and calibration dates mentioned were not correct. This was further raised as a CL. PD provided calibration certificate and also updates the dates to resolve it.

The calibration of energy meters installed at all plant sites are applicable for the current monitoring period. For 35 MW solar plant connected to Babsar Substation the due date of calibration was 25/06/2023 however the energy meters got calibrated on 20/06/2023, hence there is no delay in calibration and there is no requirement of application of error factors. This was confirmed by VVB during onsite assessment while inspecting energy meters and cross-verifying the calibration certificates. /31/

Calibration Details of meters:

1. For 35 MW solar plant connected to Babsar Substation:

S.No.	Meter Number	Type	Accuracy class	Date of calibration	Due date
1	GJ4583A	Main meter	0.2s	26/06/2020	25/06/2023
2	GJ4584A	Check meter	0.2s	26/06/2020	25/06/2023
2	GJ4585A	Standby meter	0.2s	26/06/2020	25/06/2023

2. For 40 MW solar plant connected to Bhordu Substation:

S.No.	Meter Number	Type	Accuracy class	Date of calibration	Due date
1	GJ4603A	Main meter	0.2s	21/07/2020	20/07/2023
2	GJ4604A	Check meter	0.2s	21/07/2020	20/07/2023
2	GJ4605A	Standby meter	0.2s	21/07/2020	20/07/2023

3. For 45 MW solar plant connected to Khadol Substation:

S.No.	Meter	Type	Accuracy	Date of	Due date
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	Number		class	calibration	
1	GJ4606A	Main meter	0.2s	18/08/2020	17/08/2023
2	GJ4607A	Check meter	0.2s	18/08/2020	17/08/2023
2	GJ4608A	Standby meter	0.2s	18/08/2020	17/08/2023

During the verification assessment of project activity, accuracy of all metering equipment's has been checked and found appropriate by assessment team during onsite visit/38/. The installation and working conditions of the meters were checked during the site inspection/38/ and were found to be satisfactory as compared to the provision of calibration/testing frequency, prescribed under the GS4GG/PDD/14/.

Gujarat Urja Vikas Nigam Limited (GUVNL) is the sole authority under the purview of which the meter calibration is done which is as per local/ national standards or the manufacturer's specifications /22/. The calibration records are kept at the plant site by the PD for record purpose.

If local/national standards or the manufacturer's specifications are not available, international standards shall be used but there are national standards (CEA guidelines) available so national standards is followed. PP has considered CEA order dated 17/03/2006; which prescribes under the para 18(b) that "all the meters shall be tested once in five years." Thus, validity of the calibration is considered for five years. Hence the calibration frequency in registered GS4GG/PDD/14/ the frequency is once in 03 years. Which is deemed acceptable to VKU.

3.5 Assessment of data and calculation of emission reductions or net removals

3.5.1 Calculation of baseline values or estimation of baseline situation of each SDG Impact

Verification Means	Means: During desk review and Onsite Inspection Activity Performed: The assessment team verified MR version 1.0 dated: 13/07/2023 & final MR version 2.2 dated 23/01/2024 /19/, ER Sheet /20/ with registered GS4GG/PDD/14/ version 6.0 dated: 11/01/2021, and other supporting documents i.e., PPA /30/ & Validation Report/15/
Findings	CAR 04- was raised and was further closed successfully , please refer Section 06 for detailed analysis of the finding raised.
Conclusions	Verification is done in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. SDG 13- The baseline emissions are the product of electrical energy baseline $EG_{PJ,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor. $BE_y = EG_{PJ,y} * EF_{grid,CM,y} = 136,543 \text{ tCO}_2$

	Estimated Emission Reduction as in GS PD for the equivalent period of the current Monitoring period, 01-January-2023 to 30-June-2023 (Inclusive of both the days):	
	Monitoring Period Start Date	01/01/2023
	Monitoring Period End Date	30/06/2023
	Days in Current Monitoring period	181
	Annual VERs as per GS4GG PDD	275,350
	Estimated Emission Reduction as in VERs PDD for the equivalent period of the current Monitoring period	$= (\text{Annual Estimated GHG emission reductions as per revised GS PD/Total days in a year}) * \text{days in current monitoring period}$ $= (275,350 / 365) * 181 =$ 136,543 (round down) (tCO₂e)
SDG 7- The value of net electricity estimated in ex ante calculation of approved PDD for this monitoring period is 144,966 MWh SDG 8- Total 1 training was to be conducted and 15 employees were to be hired as per ex-ante values estimated in ex ante calculation of approved PDD for this monitoring period. The Data given in the MR /14/ section E.1 and ER sheet was verified via Registered PDD /13/ during desk review stage and was found to be correct and in compliance with ISO 14064-2 clause 6.4 and 6.5 /9/.		

3.5.2 Calculation of project value or estimation of project situation of each SDG Impact

Verification Means	Means: During desk review and Onsite Inspection Activity Performed: The assessment team verified MR version 1.0 dated: 13/07/2023 & final MR version 2.2 dated 23/01/2024 /19/, ER Sheet /20/ with registered GS4GG/PDD/14/ version 6.0 dated: 11/01/2021, and other supporting documents i.e., Validation Report/15/ JMRs /27/, Invoices /28/, Employment Generation data /25/, Training Records /24/ & State Energy Account based on availability-based Tariff (ABT) /33/ for the current Monitoring Period.
Findings	CAR#01, CAR#03 & CAR#04- was raised and was further closed successfully, please refer Section 06 for detailed analysis of the finding raised.
Conclusions	Verification is done in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. Monitored parameters for the project is- SDG 13:

Baseline emissions:

It includes only CO₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology assumes⁶ that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:

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

Where;

BE_y = Baseline emissions in year y, (tCO₂e/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 CO₂e emission factor for grid connected power generation in year y

Calculation of EG_{PJ, y}

The calculation of EG_{PJ, y} is different for

- Greenfield plants,
- Retrofits and replacements, and
- Capacity additions

The project activity is the installation of solar projects, and it is a green field project. So, the formula in option

(a) i.e., greenfield plants are used to calculate the value of EG_{PJ, y}. In accordance with para 44 of the applied methodology⁷:

Where:

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).

EG_{facility, y} = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr).

$$BE_y = EG_{facility,y} * EF_{grid,CM,y}$$

$$BE_y = 160,663.78 * 0.9419$$

$$BE_y = 151,329 \text{ tCO}_2\text{e (Rounded down)}$$

Project Emissions:

As per para 31 of section 5.4 of the approved consolidated Methodology ACM0002 (Version 20.0): /12/

“For most renewable energy power generation project activities, PE_y = 0. However, some project activities may involve project emissions that can be significant. These emissions shall be accounted as project emissions by using the following equation:

$$PE_y = PE_{FF,y} + PE_{GP,y} + PE_{HP,y}$$

Where:

PE_y - Project emissions in year y (t CO₂e/yr)

PE_{FF, y} - Project emissions from fossil fuel consumption in year y (t CO₂/yr)

⁶ As per para 39. Of section 5.5 “Baseline emissions” of the Methodology ACM0002 v20.0

⁷ <https://cdm.unfccc.int/UserManagement/FileStorage/AG07ZJQ3EXD42LT5YV9HR16M8KINPO>

$PE_{GP,y}$ - Project emissions from the operation of dry, flash steam or binary geothermal power plants in year y (t CO₂e/yr)

$PE_{HP,y}$ - Project emissions from water reservoirs of hydro power plants in year y (t CO₂e/yr)

” As the project activity is the installation of a new grid-connected Solar power plant/unit and does not involve any project emissions from fossil fuel, operation of dry, flash steam or binary geothermal power plants, and from water reservoirs of hydro power plants. Therefore $PE_{FF,y}$, $PE_{GP,y}$, $PE_{HP,y}$ is equal to zero and thus,

$PE_y = 0$.

Leakage Emissions:

As per para 53 of section 5.6 of the approved consolidated Methodology ACM0002 (Version 20.0):

No leakage emissions are considered in the project activity. The main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g., extraction, processing, and transport). Since the emissions sources are small, it is neglected, thus,

$LE_y = 0$.

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
01-January-2023 to 30-June-2023	151,329	0	0	151,329

SDG 07:

$EG_{facility,y}$: During current monitoring period, the project has generated **160,663.78 MWh** affordable and clean energy.

SDG 08:

Quality of Employment - 23 Trainings

Quantitative employment and income generation - 19 employees⁸ & INR 39,48,968

The electricity generated was verified via JMRs /27/ and crosschecked with the invoices /28/ provided by the PD employment records /25/, training records /24/ and salary slips /25/ of employees.

PP has submitted declaration /25/ regarding the income generated for the current Monitoring period i.e., stating that the declaration confirms that the plant with GS ID 7572 “120 MW Solar PV Plant by Juniper Green Sigma Private Ltd. in Gujarat” located at Sabarkantha, Banas kantha and Aravali districts in Gujarat. has not opted for any third-party O&M and following practices of carrying out same internally as and when required. The cost incurred biannually (01/01/2023 - 30/06/2023) towards income paid to all the employees is INR 39,48,968.

⁸ No new employee is hired in this monitoring period.

	Since 100% data was verified, the assessment team can ascertain that the values for the emission reductions calculated are accurate and in line with ISO 14064- 2 clause 6.7 /9/.
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3.5.3 Calculation of Leakage

Verification Means	Means: During desk review and Onsite Inspection Activity Performed: The assessment team verified MR version 1.0 dated: 13/07/2023 & final MR version 2.2 dated 23/01/2024 /19/, ER Sheet /20/ with registered GS4GG/PDD/14/ version 6.0 dated: 11/01/2021, and other supporting evidences/applied methodology i.e., ACM0002 Methodology version 20.0/12/
Findings	CAR 04- was raised and was further closed successfully, please refer Section 06 for detailed analysis of the finding raised.
Conclusions	Verification is done in accordance with the registered PDD /14/ and applied methodology ACM0002 Version 20.0 /12/. Leakage (LE_y) = 0 As per Paragraph 53 of the consolidated methodology ACM0002 Version 20 /12/, there is no leakage emission considered through the renewable project electricity generation.

3.5.4 Summary calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

SDG and SDG Impact	Baseline Estimate	Project Estimate	Net Benefit	Conclusion
13- Climate Action	151,329 tCO₂e	0	151,329 tCO₂e	Assessment team conducted desk review and an on-site inspection and verified the data reported in the ER sheet /20/ and MR /19/ for current monitoring period via JMRs /27/ and invoices /28/ raised monthly and found it to be correct.
7- Affordable and Clean	0	160,663.78 MWh	160,663.78 MWh	Assessment team verified Net Electricity generated in the current monitoring period via JMRs /27/ that were further crosschecked via invoices /28/ and DGRs present onsite and found it to be correct.
8- Decent Work and Economic Growth	0	Total 8 people employed and 1 training conducted Average Salary – 39,48,968 (INR/Month)	Total people Employed: 19 Training Conducted: 23 Average Salary – 39,48,968 (INR/Month)	Assessment team verified total employment generated and trainings conducted in the current monitoring period via employment records (Salary Expense Declaration, offer letters & Wage Register), salary slips /25/ of employees and

				training records /24/ and were found to be correct.
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3.5.5 Comparison of actual emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

SDG and SDG Impact	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period	Conclusion
13- Climate Action	292,335 tCO ₂	151,329 tCO ₂ e	Assessment team conducted desk review and an on-site inspection and verified the Net Electricity generation reported in the ER sheet /20/ and MR /19/ for current monitoring period via JMRs /27/ and invoices /28/ raised monthly. Total employment generated and trainings conducted in the current monitoring period were verified via employment records, salary slips /25/ of employees and training records /24/ and were found to be correct.
7- Affordable and Clean	275,350 MWh	160,663.78MWh	
8- Decent Work and Economic Growth	1 Trainings 15 employees	23 Trainings 19 employees 39,48,968 INR	

3.5.6 Remarks on difference from estimated value in registered PDD

Verification Means	Means: During desk review and Onsite Inspection Activity Performed: The assessment team verified MR version 1.0 dated: 13/07/2023 & final MR version 2.2 dated 23/01/2024 /19/, ER Sheet /20/ with registered GS4GG/PDD/14/ version 6.0 dated: 11/01/2021.					
Findings	No findings raised					
Conclusions	The ex-ante estimates value of the emission reductions for the monitoring period as per the registered PDD /13/, is 136,543 tCO ₂ e and the actual emission reductions achieved for the monitoring period is 151,329 tCO ₂ e. The table below defines the estimated and achieved values of the parameters:					
	SDG Indicator	SDG	Values Estimated Annually as per PDD	Values Estimated for current MP	Values achieved for Current MP	Unit
	Affordable and Clean Energy	SDG 7	292,335	144,966	1,60,663.78	MWh
	Decent Work and Economic Growth	SDG 8	15	15	19	Number of employees
			01	01	23	Number of Trainings
			-	-	39,48,968	Income generation
	Climate Action	SDG 13	275,350	136,543	1,51,329	tCO ₂ e per annum

For SDG 13, Since actual emission reduction is higher than the estimated value by 10.83%

This is due to the increase in power output resulting from a higher number of sunshine hours. This suggests that power output is directly related to the amount of sunshine, and that the higher generation observed during the current period.

This is reflected as higher PLF for the 06 months due to peak season from March to June 2023 during current MP, along with other climatic factors observed which are beyond the control of PD and hence it is acceptable to the verification team.

The PLF analysis is as follows:

(Current Monitoring period i.e., 6 months)

Estimated PLF as per registered PDD	28.36%
Current monitoring period	Actual Generation (MWh)
Total no. of days	181
01-Jan-23 30-Jun-23	
Total generation	160,664
Capacity	120
Actual PLF	30.82%
Percentage Variation in PLF with respect to Registered PDD	8.68%
As per registered PDD IRR for the project activity was 8.26% at the PLF of 28.36 % and the IRR benchmark was 14.17%. As per sensitivity analysis project will breach the benchmark of 14.17% when the PLF increases by 22.30% i.e., when $PLF \times (1+22.30\%) = 28.36\% \times (1+22.30\%) = 34.68\%$	34.68%

(Current + Previous Monitoring period i.e., 1 Year)

Estimated PLF as per registered PDD	28.36
Current monitoring period	Actual Generation (MWh)
Total no. of days	365
01-Jul-22 30-Jun-23	
Total generation	296,829
Capacity	120
Actual PLF	28.24%

	Percentage Variation in PLF with respect to Registered PDD	-0.43%
	As per registered PDD IRR for the project activity was 8.26% at the PLF of 28.36 % and the IRR benchmark was 14.17%. As per sensitivity analysis project will breach the benchmark of 14.17% when the PLF increases by 22.30% i.e., when $PLF \times (1+22.30\%)$ $= \frac{28.36\%}{(1+22.30\%)} = 34.68\%$	34.68 %
*Above results clearly show that the PLF with breaching value is higher than actual PLF hence project is additional This performance of PLF analysis underscores the project's additionality, demonstrating that it delivers emission reductions beyond what would be achieved through business-as-usual practices. The higher-than-expected emission reductions, despite the high PLF compared to the GS4GG PDD projection, provide compelling evidence of the project's environmental benefits. The monitoring report provides reason for increase in the actual emission reduction and the same was confirmed by the verification team by cross verifying the records submitted by the PD i.e., JMRs, Invoices reflecting Higher net generation and PLF obtained from SCADA installed at the site also further confirmed by interviewing the site personnel regarding the sunshine hours and plant generation in past years in different seasons. Thus, VKU is of opinion that the facts stated by PD is correct and calculations for ER and PLF is done correctly and in line with applied methodology. All the data have been made available to the assessment team by PD during site visit/38/ and as supporting evidences which have been monitored as per required monitoring frequency. The means of verification for the values of parameters, used for baseline emission calculation, is described above. The assessment team has checked and confirmed the emission reduction calculations in the spreadsheet and found to be accurate. The monitoring report/19/ is supported by emission reduction spreadsheet/20/. The consistency and formula were verified and found to be accurate. VKU is of the opinion that this method of calculation of emission reductions is accurate and results in conservative estimation of emission reduction and is in line with the applicable GS requirements set out in section 12.13 clause 12.13.2 of GS Standard version 01 and that the verification of the GHG statement was conducted in accordance with ISO 14064-3; 2019.		

3.6 Safeguards Reporting

Assessment Team confirms that project representative has provided all the evidences (employment record, salary slips /24/) to verify the safeguarding principles that are added in the monitoring plan.

Assessment Team concluded that project representative provided all required information as per the Template Guide- MR v1.1 and they are correct and in compliance with GS4GG Safeguarding Principles Requirement v2.1 dated: 29/06/2023.

Principles	Mitigation Measures added to the Monitoring Plan
Principle 2. Gender Equality	PD is providing the equal pay for equal work. PP is monitoring this parameter under SDG (8.5.1)
Principle 6.1 Labor Rights Principle 3	PD is providing the Trainings on regular basis to their employees. PD is monitoring this parameter under SDG (8.5.1)
Principle 9.5 Hazardous and Non-hazardous Waste	The waste is disposed to the waste handlers and the firm comply with all the local laws for monitoring and disposal. However, the Solar PV based power generation project does not involved any Hazardous or Non-Hazardous waste generation in this monitoring period.
The Parameter involves monitoring the production, trade, disposal, and utilization of both hazardous and non-hazardous chemicals or materials. The VVB team confirmed that there were no instances of generating or disposing of hazardous waste or waste oil, nor were there any spills or leaks of diesel or waste oil throughout the monitoring period. The required evidences are submitted to the VVB i.e., Agreement for Disposal of E-waste signed between Government of Haryana & Juniper Green Sigma Private Limited /35/ & Waste Management Data Sheet/36/ and further cross-checked with plant records, HR reports, and PP declarations. Additionally, the verification team interviewed employees during the onsite audit to verify these findings Hence VVB is of opinion that PD has compliance with all the safeguarding principles that are declared in the monitoring plan in the registered PDD & it is deemed satisfactory.	

3.7 Stakeholder inputs and legal disputes

3.7.1 List all Inputs and Grievances which have been received via the Continuous Input and Grievance Mechanism together with their respective responses/mitigations.

During desk review, Assessment team checked the procedures mentioned in MR and during onsite inspection cross verified the same via interviews of site personnel and stakeholders /41/ that- as a part of continual improvement process- PD has kept visitor register cum grievance register /26/ at the project site which is accessible to stakeholders to provide their feedback on the project. It is placed appropriately at a publicly accessible location where local stakeholders can provide their feedback. This location is also conducive to continuous and regular checks for stakeholder comments. The grievance register is being continuously monitored and addressed through the grievances cell on regular basis.

In the current monitoring period, no grievances have been received and this was verified during onsite inspection /38/ via the Visitor register cum grievance register /26/ placed on site.

3.7.2 Report on any stakeholder mitigations that were agreed to be monitored.

During onsite inspection Assessment Team verified visitor register cum grievance register /26/ placed on site and conducted personnel interviews /41/ and concluded that there was no negative feedback logged during the current monitoring period. The stakeholders interviewed are listed in [Table no 13.2 of this report](#).

3.7.3 Details of legal contest that has arisen with the project during the monitoring period

Assessment Team confirms that the given GS4GG project “120 MW Solar PV Plant by Juniper Green Sigma Private Ltd. In Gujarat” is in compliance with the Host Country “India” legal environmental, ecological and social regulations as per requirements mentioned in section 7.11 at time of validation for design certification for standalone project activity of validation and verification standard v1.0 /5/ and

there is no legal challenge that has arisen claiming a project is not in compliance with regulation, during certification process.

3.8 Quality of evidence to determine emission reductions

As per the verification of ER calculation process, assessment team confirmed that all the parameters required for determination of emission reductions has been included in the Monitoring report Version 2.2 dated 23/01/2024/19/ and corresponding ER calculation spread-sheets Version 2.1 /20/ dated 23/01/2024 and are consistent with the applied methodology ACM0002 Version 20.0 /12/ and the monitoring plan contained in the registered PDD /14/. The parameters used are completely monitored as per the registered PDD /14/ in this monitoring period.

During desk review and onsite inspection, assessment team verified the reported ERs with the help of supporting documents e.g., JMRs, Invoices, DGR and conducted personnel interviews to check sufficiency of data and its aggregation.

No significant, lack of evidence and missing data were detected during verification. Hence, the verification team confirms that the monitoring plan ensures required management of the monitoring system to ensure the quality of the monitored data. All internal data are subjected to QA/QC measures. The verification process for the same has been clearly described in above section of the report.

Emission reductions is calculated by the “Quantity of net electricity supplied from the project (solar) plant/unit to the grid in year y”, $EG_{\text{facility, y}}$ (MWh) (SDG Indicator 7). This parameter is monitored through the reading of Energy meters installed. The meters have accuracy of class 0.2s.

The electricity generated was checked via JMRs /27/ and were crosschecked with records of electricity sale (e.g., sales receipt/Invoices) /28/. Calibration of all the meters undertaken once in every three years as per PPA. On site personnel interview /41/ with the site personnel of the project activity confirms that the necessary QA/QC procedures are in place. Data management system is effective and reliable for the net electricity supplied by the project plant/unit to the grid in year y. Hence assessment can conclude that the data and its management is in compliance with GS4GG validation/ verification standard /5/

3.9 Management system and quality assurance

The final verification report passed a technical review and completeness check/ Quality check before being submitted to the client for forward submission to GS.

A technical reviewer qualified in accordance with VKU certification competency form which VKU.F8A. Competency Evaluation of Personnel (Internal Document) for validation and verification of GHG projects performed the technical review.

The comments raised during the technical review stage is thoroughly addressed by the assessment team. After the comments raised during this stage is successfully addressed, the Final verification report undergo VKU's Completeness/Quality Check before issuance.

3.10 Verification Assessment

All the data have been made available to the assessment team by PP during site visit/38/ and as supporting evidences during verification assessment which have been monitored as per required monitoring frequency. The means of verification for the values of parameters, used for baseline emission calculation, is described above in the report.

The verification team attests to correctness of the formulas and methodologies used to compute baseline emissions as per GS4GG Validation and Verification Standard V1.0 /5/. Applied default values, emission factors, and assumptions in the calculations are all reasonable. Verification team attests to the correctness of formulas and methodologies used in calculation of baseline emissions, assumptions, emission factors and default values applied in the calculations are justified.

SDG Indicators during this monitoring period 01/01/2023 – 30/06/2023 is:

SDG 13- Actual emission reduction achieved is **151,329 tCO₂e** calculated by multiplying the unit of MWh produced by an emission factor. The value of emission factor is verified from the PDD /14/ and is calculated as per “Tool to calculate the emission factor for an electricity system,”. The data is obtained from “CO₂ Baseline Database for Indian Power Sector” version 15.0, /13/ published by the Central Electricity Authority, Ministry of Power, Government of India.

SDG 7- Amount of net electricity generated is **160,663.78 MWh**. Value calculated was verified via JMRs /24/ and was further cross verified by Invoices /28/.

SDG 8- Employment generated 19 verified via employment records and salary slips /25/ and **23 trainings conducted** were verified via training records provided by PDD /14/.

The verification consisted of the following phases:

- **Document Review:** Relevant documents, such as the verification report, monitoring plan, methodology, GS PDD, QA/QC procedures and supporting documents were thoroughly reviewed.
- **On-Site Assessment:** This included crosschecking of data, personnel interviews and evaluation of the actual project scenario.
- **Resolution of Discrepancies:** Any non-conformities identified during the assessment were addressed and resolved.

In this monitoring period, **CAR: Corrective Action :04, CL: Clarification Request :02** were raised and resolved. No FAR was raised.

Description of the findings raised is provided in Section 6 of this verification report.



3.11 Verification Opinion

VKU Certification, contracted by Infinite Environmental Solutions Limited., has performed the independent verification of the emission reductions for the GS Project ID 7572 “120 MW Solar PV Plant by Juniper Green Sigma Private Ltd. in Gujarat” for the monitoring period 01/01/2023 to 30/06/2023 as reported in the Monitoring Report, Version 2.2 dated 23/01/2024/19/. Site in-charge responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity.

VKU commenced the verification against the baseline and monitoring methodology ACM0002, version 20.0 /12/ the monitoring plan contained in the PDD Version 06 dated 11/01/2021/14/ and Monitoring Report Version 2.2 dated 23/01/2024/19/.

VKU Certification confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements. This verification report has been prepared using the latest available template specified by GS4GG registry and complies with the instructions to follow as per GS4GG principle and requirements v1.2 /1/ and GS4GG validation and verification standard v1.0 /5/. The verification activities were conducted in accordance with VKU Certification’s Quality Manual System and SOP 4 of this report and as per the GS4GG validation and verification standard v1.0 /5/. As a result, it is concluded that the emission reductions from the GS Project Activity ID 7572 “120 MW Solar PV Plant by Juniper Green Sigma Private Ltd. in Gujarat” are correctly reported in the Monitoring Report Version 2.2 dated 23/01/2024/19/ and corresponding ER sheet /20/ for the monitoring period 01/01/2023 to 30/06/2023 (including both days) amounted to **151,329 tCO₂e**.

VVB opinion on issuance as per the ISO 14064-3, clause 9 which is in compliance with GS4GG principles and requirement v1.2 and GS4GG validation and verification standard v1.0. The VVB hereby issues a resolutely **positive opinion** meticulously drafted in strict accordance with ISO 14064-3:2019, /9.2/ Section 09, and the precise provisions of Clause 9.7.1.6 & 9.7.2 of ISO 14065:2020. /9.3/ This opinion stands in full alignment with the exacting requirements delineated in ISO/IEC 17029:2019, Section 9.7./9.4/

Our verification process provides a robust and **reasonable level of assurance** regarding the veracity of the reported GHG emission reduction data. This data was accounted for 1% materiality as per GS4GG VVS & the data/information is steadfastly supported by the evidence furnished by the Project Proponent (PP), comprehensively presented in [section 04](#) of this report.

VVB Opinion	Conclusion
Positive	☒
Negative	☐

4. REFERENCE/DOCUMENTS USED IN THE VERIFICATION

S.No	AUTHOR		TITLE	REFERENCE TO THE DOCUMENT	PROVIDER
Background Documents/Weblinks					
1.	Gold Standard		<u>Principles and Requirements</u>	Version 1.2 and Dated: 23/10/2019	Gold Standard Website
2.	Gold Standard		<u>Stakeholder consultation and engagement requirements</u>	Version 2.1 and Dated: 14/06/2022	Gold Standard Website
3.	Gold Standard		<u>Safeguarding principles & requirements</u>	Version 2.1 and Dated: 29/06/2023	Gold Standard Website
4.	Gold Standard		<u>Design change requirements</u>	Version 1.1 and Dated: 14/04/2023	Gold Standard Website
5.	Gold Standard		<u>Validation and verification standard</u>	Version 1.0 and Dated: 06/03/2023	Gold Standard Website
6.	Gold Standard		<u>Site visit and remote audit requirements and procedures</u>	Version 2.0 and Dated: 30/05/2023	Gold Standard Website
7.	Gold Standard		<u>Applicability of minimum site visit requirement by VVB</u>	Version 2.0 and Dated: 16/08/2021	Gold Standard Website
8.	Gold Standard		<u>Validation & verification body requirements</u>	Version 2.0 and Dated: 14/01/2021	Gold Standard Website
9.	9.1	ISO	<u>ISO- 14064-2:2019: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements</u>	Dated: 04-2019	ISO Website
	9.2	ISO	<u>ISO 14064-3:2019: Greenhouse gases — Part 3: Specification with guidance for the verification and validation of greenhouse gas statements</u>	Dated: 04-2019	ISO Website
	9.3	ISO	<u>ISO 14065:2020: General principles and requirements for bodies</u>	Dated: 2020-12	ISO Website

			<u>validating and verifying environmental information</u>		
	9.4	ISO	<u>ISO/IEC 17029:2019: Conformity assessment — General principles and requirements for validation and verification bodies</u>	Dated: 2019-10	ISO Website
10.	Gold Standard		<u>Renewable energy activity requirements</u>	Version 1.4 and Dated: 16/08/2021	Gold Standard Website
11.	Gold Standard		<u>Gold standard eligible impact quantification methodologies</u>	Version 2.4 and Dated: 22/06/2023	Gold Standard Website
12.	UNFCCC CDM		<u>Methodology- ACM0002 “Grid-connected electricity generation from renewable sources</u>	Version 20.0 and Dated: 28/11/2019	CDM Website
13.	Central Electricity Authority		CO ₂ Baseline Database for Indian Power Sector	Version 15	Central Electricity Authority website
14.	Infinite Environmental Solutions Limited		GS4GG PDD	Version 06 and Dated 11/01/2021	Gold Standard Website
15.	Gold Standard	LGAI Technological Center, S.A	Design Certification (Validation) Report Version 02 and Dated 11/09/2020		Gold Standard Website
16.	Gold Standard	LGAI Technological Center, S.A	Registered Previous Verification report Version 03 and Dated 21/04/2023		Gold Standard Website
17.	UNFCCC CDM		Tool for the demonstration and assessment of additionality	Version 07	CDM Website
18.	UNFCCC CDM		Tool to calculate the emission factor for an electricity system	Version 07	CDM Website
Reference/Supporting documents submitted by PD to VVB					
19.	Infinite Environmental Solutions Limited		Monitoring Report	Version 01 and Dated 13/07/2023 Version 02 and Dated 23/08/2023 Version 2.1 and Dated 22/11/2023	Infinite Environmental Solutions Limited



			Version 2.2 and Dated 23/01/2024	
20.	Infinite Environmental Solutions Limited	ER Sheet	Version 01 and Dated 13/07/2023 Version 02 and Dated 23/08/2023 Version 2.1 and Dated 23/01/2024	Infinite Environmental Solutions Limited
21.	Juniper Green Sigma Private Limited	Commissioning Certificates	Commissioning Date: 17- 10-2020 Capacity: 25MW/36.247 MW (DC) Commissioning Date: 19/10/2020 Capacity: 25 MW (AC)/36.41 MW (DC) Commissioning Date: 28/11/2020 Capacity: 10MW (AC)/14.696 MW (DC) Commissioning Date: 28/11/2020 Capacity: 20 MW (AC)/29.459 (DC) Commissioning Date: 09/12/2020 Capacity: 25 MW (AC)/36.541 (DC) Commissioning Date:17/12/2020 Capacity: 15 MW (AC)/21.86 (DC)	Infinite Environmental Solutions Limited
22.	Juniper Green Sigma Private Limited	Technical Specifications	N/A	Infinite Environmental Solutions Limited
23.	Juniper Green Sigma Private Limited	Single Line diagram of the project (SLD)	N/A	Infinite Environmental Solutions Limited



24.	Juniper Green Sigma Private Limited	Training Records applicable for current monitoring period from 01- January- 2023 to 30- June-2023	N/A	Infinite Environmental Solutions Limited
25.	Juniper Green Sigma Private Limited	Employment records and salary slips of personnels applicable for the current monitoring period Declaration for SDG 08	N/A	Infinite Environmental Solutions Limited
26.	Juniper Green Sigma Private Limited	Grievance Register Photograph	N/A	Infinite Environmental Solutions Limited
27.	GUVNL	Joint Monitoring Report	N/A	Infinite Environmental Solutions Limited
28.	Juniper Green Sigma Private Limited	Invoices	N/A	Infinite Environmental Solutions Limited
29.	Juniper Green Sigma Private Limited	SDG 08 Wage Register Offer Letters Expense Declaration for SDG 08	Dated: 22/05/2023	Infinite Environmental Solutions Limited
30.	Govt. Entity	Power Purchase Agreement	Signed between Juniper Green Sigma Private Limited & Gujrat Urja Vikas Nigam Limited Dated: 21/05/2019	Infinite Environmental Solutions Limited
31.	Hi-Tech Meter Laboratory	Calibration Certificates of energy meters installed	Certificate dated: 26/06/2020 SRF No: 5076/2020 [T] Certificate dated: 21/07/2020 SRF No: 5159/2020 [T] Certificate dated: 18/08/2020 SRF No: 5215/2020 [T]	Infinite Environmental Solutions Limited
32.	Juniper Green Sigma Private Limited	Self- Declaration for no double counting	N/A	Infinite Environmental Solutions Limited



33.	Gujarat Energy Transmission Corporation Limited	State Energy Account based on availability-based Tariff (ABT) for the current Monitoring Period	N/A	Infinite Environmental Solutions Limited
34.	Juniper Green Sigma Private Limited	Plant Breakdown Detail	N/A	Infinite Environmental Solutions Limited
35.	Government of Haryana	Agreement for Disposal of E-waste	Signed between Juniper Green Sigma Private Limited & Ecotime Industries	Infinite Environmental Solutions Limited
36.	Juniper Green Sigma Private Limited	Waste Management Data Sheet	Health Safety Environment Management Systems	Infinite Environmental Solutions Limited
37.	Juniper Green Sigma Private Limited	PLF Details	N/A	Infinite Environmental Solutions Limited
VVB Documents used during Current Verification				
38.	VKU Certification	Onsite Inspection- Site Photographs	Dated: 14/07/2023	N/A
39.	N/A	GPS Map Camera: Geotag Photos & Add GPS Location	N/A	N/A
40.	N/A	Google Earth Software	N/A	N/A
41.	VKU Certification	Onsite Personnel and Stakeholders Interview	Dated: 14/07/2023	N/A
42.	VKU Certification	VKU.F64W.Field Assessment Checklist for Onsite Visit	Dated: 14/07/2023	N/A
43.	VKU Certification	VKU.F46W. Attendance Sheet of audit	Dated: 14/07/2023	N/A
44.	VKU Certification	Risk Assessment	Version 02 Dated 16/07/2023	N/A
45.	VKU Certification	Audit & Sampling Plan	Dated: 13/07/2023	N/A
46.	VKU Certification	Evidence Gathering Plan	Dated: 13/07/2023	N/A

5. Certification Statement

VKU Certification Private Limited (VKU Certification), contracted by Infinite Environmental Solutions Limited, has performed the independent verification of the emission reductions for the GS4GG project activity 7572 “120 MW Solar PV Plant by Juniper Green Sigma Private Ltd. in Gujarat” in India for the monitoring period 01/01/2023 to 30/06/2023 (both dates included) as reported in the Monitoring Report (public) Version 2.2 dated 23/01/2024/19/. The Infinite Environmental Solutions Limited is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity.

It is our responsibility to express an independent verification statement on the reported GHG emission reductions from the project activity

VKU Certification commenced the verification on the basis of the baseline and monitoring methodology ACM0002 V 20.0 /12/ the monitoring plan contained in the PDD Version 06 dated 11/01/2021/14/, Monitoring Report (public) Version 2.2 dated 23/01/2024/19/ as per the methodology described under Section 2 of this report.

VKU Certification’s verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. VKU Certification planned and performed the verification by obtaining evidence and other information and explanations that VKU Certification considered necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

In our opinion the GHG emissions reductions reported for the project activity for the period 01/01/2023 to 30/06/2023 (both dates included) are fairly stated in the Monitoring Report (final) Version 2.2 dated 23/01/2024/14/. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology ACM0002 V 20.0 /12/ and the monitoring plan contained in the PDD Version 06 dated 11/01/2021/14/.



VKU Certification Private Limited is able to certify that the emission reductions from the GS4GG project activity 7572 “120 MW Solar PV Plant by Juniper Green Sigma Private Ltd. in Gujarat” in India during the period 01/01/2023 to 30/06/2023 (both dates included) amount to **151,329 tCO₂e**.

Verified and certified emission reductions as per commitment period:

Commitment period	Amount
From: 01/01/2023 to 30/06/2023 (both dates included)	151,329 tCO ₂ e

(Insert Signature)

Dr Vikas Kumar Aharwal

05/02/2024

Founder and Director

Indore, India

VKU Certification Private Limited

6. VERIFICATION FINDINGS (CAR/CL/FAR)

[CL: Clarification Request 02](#)

[CAR: Corrective Action Request 04](#)

[FAR: Forward Action Request 00](#)

Description of Clarification Requests (CLs) raised by VVB:

Type	Date	01-August-2023
CL#01	Reference	Section of Val/Ver protocol: A.1, B.1, C, D.1, D.2, & Appendix
Description of the Non-Conformance		
1) In table 1 of MR: a) PD has not provided the supporting documents for the verification of SDG indicator 7 b) PD has not provided the evidence for the verification of SDG target 8. 2) In section A.1. of MR: PD has not provided the reference/weblink for the tool used. 3) In section B.1. of MR: a) PD has not provided the commissioning certificates for the verification of commissioning dates. b) PD has not provided provide the evidence for the verification of the technical specification of the project activity. c) PD has not provided the last verification documents to the VVB. 4) In section C of MR: PD has not provided the training records for current monitoring period. 5) In section D.1. of MR: PD has not clarified the inconsistency in the version number. Also, PD to further clarify the inconsistency in FVR regarding the version used for CEA database on page number 14 & 26. 6) In section D.2. of MR: PD has not provided the evidence for verification of the SDG Indicator 8.5.1. 7) In section D.2. of MR: PD has not provided the sample copy of daily attendance register. 8) In section D.2. of MR: PD has not provided the evidence for the verification that the waste was disposed to the waste handlers and the firm will comply with all the local laws for monitoring and disposal. 9) In Appendix – 1 of MR: PD has not provided the evidences for the verification of calibration dates of the mentioned meters of the project activity. 10) In ER Sheet: PP has not provided the copy of JMRs and Invoices for the month of June.		
1 st Response from PP	Date	10-August-2023
1) The relevant documents for SDG 7 & 8 are being submitted with the DVR Responses. 2) Weblink(s) has been provided and updated wherever required throughout the MR. 3) The relevant documents are being provided i.e., Commissioning Certificate, Technical specifications, Last verification documents. 4) The relevant documents i.e., Training Records, attendance etc. are being provided with the DVR Responses. 5) The relevant sections have been updated as per the requirements and the latest PDD applicable to current monitoring period. 6) The relevant documents/evidence for the verification of SDGs are being submitted with the DVR Responses. 7) The relevant documents are being submitted with the DVR Responses. 8) The relevant documents are being submitted with the DVR Responses.		

9) The relevant documents i.e., Calibration Certificates for the Meters are being provided with the DVR Responses.

10) The relevant documents are being provided with the DVR Responses.

1st Assessment by Audit Team	Status	Closed	Date	12-October-2023
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- 1) The assessment team confirms that PD has Submitted The relevant documents for SDG 7 & 8 with the DVR Responses same has been checked and found consistent and hence accepted by the assessment team. **(Closed)**
- 2) The assessment team confirms A working Weblink(s) has been incorporated and updated wherever required the MR, and assessment team have checked all the links and found it working hence accepted by the assessment team. **(Closed)**
- 3) The relevant documents are being provided i.e., Commissioning Certificate, Technical specifications, and Last verification documents by the PD same has been verified, and found that the required document has been submitted and hence accepted by the assessment team. **(Closed)**
- 4) The assessment team confirms that PD has submitted the relevant documents i.e., Training Records, attendance, etc. as evidence for training the DVR Responses same has been verified and found correct hence accepted by the assessment team. **(Closed)**
- 5) PD has made the required changes in the section, confirms the assessment team.
- 6) The assessment team confirms that relevant documents/evidence for verification of the SDG Indicator 8.5.1. are being submitted with the DVR Responses by PD same has been checked and found relevant. **(Closed)**
- 7) A sample copy of the daily attendance register has been provided to the assessment team the same has been checked and confirmed by the assessment team. **(Closed)**
- 8) The assessment team confirms that the evidence for the verification that the waste was disposed to the waste handlers and the firm will comply with all the local laws for monitoring and disposal has been submitted by the PD which found correct hence accepted. **(Closed)**
- 9) The Calibration Certificates for the Meters provided for the verification of calibration dates have been submitted same has been checked and found consistent. **(Closed)**
- 10) JMRs and Invoices are well received by the Assessment team

CL#01 is successfully closed by the assessment team.

Type	Date	11-November-2023
CL#02	Reference	Section of Val/Ver protocol: A, B, C & D of MR
Description of the Non-Conformance		
1. In section A.2 of MR: The screengrab from the google earth maps do not provide context of the location in terms of mention of landmarks, direction north and scale. Besides this is not as per para 18 of the general instructions to fill MR of GS4GG. 2. In section B.1 of MR: PD is requested to provide the following technical specifications of the project activity (assuming that SMB type of solar power plant is in place): • Voltage at the solar panel end whether it is AC or DC? • The number of inverters and the corresponding Inverter Controller Rooms (no of inverters per ICR) • The output voltage of the power from the inverter room • The number of IDTs connected at the ICoRs and their corresponding voltages. • The incomer/outgoer HT panels and the output voltage from the HT panels.		

- The evacuation of the power from the plant end to the grid line and the corresponding voltage. - The location of the monitoring meters, details of the feeders (whether they are dedicated or not) is not mentioned.
3. In section B.1.1. of MR: The performance review feedback for last verification has not been provided by the PD.
4. In section C of MR: In case there is delay in calibration as per the calibration dates, how is the procedures for determine the energy generation applied.
5. In section C of MR: In case of manmade or natural calamities when both the meters are damaged, how will the energy generation have measured? What mechanism or redundancy is available at site to account for such exigencies.
6. In section D.2 pf MR: On an average the per employee income comes to Rs 179,499 per month or Rs 5,983.28 per day wages. In the earlier row it is stated that minimum wages are given to the employees
7. In section D.2 of MR: PD need to state the total number of employees per site, assuming that same employees might have attended different training sessions.
8. In section D.2 of MR: The transformers used in the project activity using oils for cooling purposes generate waste oil which is a HW. How is this handled at site.
9. In section E.6 of MR: PD has merely stated the variability of sunshine hours for the monitoring period without backing the same with data for this monitoring period. PD to follow the requirements as per instructions to fill MR.

1 st Response from PP	Date	22-November-2023
1. In section A.2 of MR: The Map has been updated as per the para 18 of guidelines to fill MR. 2. In section B.1: The technical specifications have been incorporated in the relevant section: - - Voltage at the solar panel end is AC, the same has been updated in the section - The number of inverters and the corresponding ICR is mentioned below in the section. - The output voltage of the power from the Inverter room is also mentioned below in the section. - The relevant information can be found below in the section. - The same has been mentioned in the table and also in the above paragraph. - The comment is not applicable, as no feeder is available in the project activity. 3. In section B.1.1. of MR: Annual Report has been submitted to the Sustain Cert Portal and the Annual Report has been provided to the VVB. 4. In section C of MR: In the absence or delay in the meter calibration, appropriate Guidelines/error factor will be applied to confirm the conservativeness of metering. Also, the meter in question is in control and supervision of GUVNL. 5. In section C of MR: In case of manmade or natural calamities when both the meters are damaged, standby meter is used in such situation. 6. In section D.2 of MR: The INR mentioned signifies the total of the skilled employee income for the current monitoring period. 7. In section D.2 of MR: The number of employees that attended the training has been incorporated in the relevant section. 8. In section D.2 of MR: The waste generated is being handled as per the national regulatory guidelines and the same has been mentioned in the section. 9. In section E.6 of MR: The increase in actual ERs from the estimated is due to the sunshine hours of this monitoring period which includes the Hot and Humid Summer season, while the estimated ERs were calculate for whole year that also consists of cold seasons of Monsoon and Winter. The same has been mentioned in the section.		

1 st Assessment by Audit Team	Status	Closed	Date	08-December-2023
In section A.2 of MR: PD has updated the Map as per the para 18 of guidelines to fill MR. In section B.1: VVB confirms that the technical specifications have been incorporated. In section B.1.1. of MR: VVB has cross-checked the annual report submitted by the PD, Hence the FAR is closed. In section C of MR: VVB confirms that PD has incorporated details that in the absence or delay in the meter calibration, appropriate Guidelines/error factor will be applied to confirm the conservativeness of metering. Also, the meter in question is in control and supervision of GUVNL. In section C of MR: PD stated that in case of manmade or natural calamities when both the meters are damaged, standby meter is used in such situation, VVB has verified the same. In section D.2 of MR: PD confirms that the INR mentioned signifies the total of the skilled employee income for the current monitoring period. VVB confirms that PD has submitted the required supporting documents. In section D.2 of MR: The number of employees that attended the training has been incorporated in the relevant section and required supporting documents have been verified and found correct. In section D.2 of MR: The waste generated is being handled as per the national regulatory guidelines and the same has been mentioned in the section, the same was confirmed during site visit while interview with site personnel. In section E.6 of MR: PP has submitted the PLF records obtained from the SCADA that explains about the increase in actual ERs from the estimated is due to the sunshine hours of this monitoring period which includes the Hot and Humid Summer season, while the estimated ERs were calculate for whole year that also consists of cold seasons of Monsoon and Winter. CL#02 is successfully closed by the assessment team.				

Description of Corrective Action Requests (CARs) raised by VVB:

Type	Date	01-August-2023
CAR#01	Reference	Section of Val/Ver protocol: Section A
Description of the Non-Conformance		
1) Section of key project information on first page of MR is found inconsistent with the GS Monitoring report template and guide version 1.1. PD is requested to update. 2) In section Key project information on second page of MR: a) During desk-review assessment team checked the registered PDD version 06 dated 11/01/2021 and found the project design certification inconsistent, also the 3rd verification documents were cross-checked by the assessment team and found the date of project design certification as 09/11/2020 however the latest PDD applicable to that verification and current verification is version 06 dated 11/01/2021 b) As per the contractual agreement done with VVB, this was the 5th verification or 5th monitoring period number. PD is requested to update this. c) During desk review assessment team checked the weblink and found that it was not-working. PD to provide a working link. 3) In table 1 of MR: a) PD has not elaborated the type of employees hired skilled, semiskilled or unskilled. b) What is this INR value indicating? PD to provide elaborated statement about the same. 4) In section A.1. of MR: a) PD is requested to avoid the duplication of the statements. b) PD has not provided the estimate value of the electricity and emissions as defined in the PD for better comparison between proposed and implemented project activity scenario, since PD has mentioned about the existing scenario. c) During desk review PD has not mentioned about the Host country where this State Gujarat is located. d) PD has not employed the official name? e) PD has not substantiated the methodology referred here with required weblink for the tool used. 5) In section A.2. of MR: a) PD has not specified where this State Gujarat is located, where the implementation of the project activity is taking place. b) During desk-review assessment team cross-verified the geo-coordinates from the google earth & also confirmed the same during onsite visit, the plant is spread over several acres, & PP has not provided the geo-coordinates to represent the full extent of the plant c) Assessment team cannot comprehend the Map added in this section, PD to provide a map which can be clearly comprehended. 6) In section A.3. of MR: PD has not substantiated the methodology/tools referred here with required weblink for the tool used. 7) In section A.4. of MR: PD has not filled the section as per the guidelines to fill the Monitoring Report Template "Provide the start and end dates (in DD/MM/YYYY – DD/MM/YYYY) and length of the crediting period as given in approved PDD. If the CP start date is wrong in the PDD, the PDD must be updated with the correct information.".		
1stResponse from PP	Date	10-August-2023
1) The relevant section has been revised as per the latest PDD applicable to the current monitoring period.		

- 2) The relevant section has been updated and revised as per the latest PDD applicable to the current monitoring period, also the Monitoring period No. has been corrected accordingly. Weblink has been updated and checked.
- 3) The type of employees hired have been elaborated in the section D.2, also the INR value is indicating the Income generation by the employment, same has been updated in the Table. (Closed)
- 4) **In section A.1. of MR:**
 - a. Duplicate statements have been removed throughout the MR.
 - b. The required information has been updated in the relevant section.
 - c. The relevant information about the host country has been updated.
 - d. The official name for the project developer has been updated in the section.
 - e. Weblinks have been updated and checked throughout the MR.
- 5) **In section A.2. of MR:**
 - a. The relevant section has been updated.
 - b. Geocoordinates have been updated and checked to represent the full extent of the plant.
 - c. The map has been revised in the relevant section.
- 6) The weblinks have been updated and checked throughout the Monitoring Report.
- 7) The relevant section has been updated as per the Latest PDD applicable to the current Monitoring period.

1stAssessment by Audit Team	Status	Closed	Date	12-October-2023
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- 1) PD has updated the section of MR as per MR template guidelines.
- 2) The assessment team confirms that the required information regarding project design certification and verification number inconsistent has been incorporated in the MR the same has been checked by the assessment team and found incorporated and consistent and hence accepted by the assessment team. (Closed)
- 3) **In table 1 of MR:** The assessment team confirms that the type of employees hired has been elaborated in the section D.2 (Closed)
- 4) **In section A.1. of MR:**
 - a. The assessment team confirms by reviewing MR that the Duplicate statements have been removed throughout the MR. (Closed)
 - b. The information regarding the estimated value of the electricity and emissions are updated in the MR same has been reviewed and confirmed by the assessment team. (Closed)
 - c. The relevant information about the host country has been updated in the MR and the same has been reviewed and confirmed by the assessment team
 - d. The official name for the project developer has been updated in the section same has been reviewed and confirmed by the assessment team. (Closed)
 - e. Assessment team confirms that the Weblinks have been updated by the PD and checked throughout the MR by assessment team and found working (Closed)
- 5) **In section A.2. of MR:**
 - a. The relevant section has been updated as per the requirement of the Assessment team same has been reviewed and confirmed by the assessment team (Closed)
 - b. Geocoordinates have been updated by the PD and checked using Google Earth by the assessment team same has been found consistent also PD has provided the geo-coordinates to represent the full extent of the plant same has been checked and confirmed by the assessment team (Closed)
 - c. The assessment team confirms that the information has been incorporated in the MR same has been checked. (Closed)

- 6) **In section A.3. of MR:** The weblinks have been updated throughout the Monitoring Report same has been checked and found working by the assessment team hence accepted by the assessment team. **(Closed)**
- 7) **In section A.4. of MR:** PD has updated the section as per the requirement of the Monitoring report template and found it consistent with the MR template, hence accepted by the assessment team **(Closed)**
- CAR#01 is successfully closed by the assessment team.**

Type	Date	01-August-2023
CAR#02	Reference	Section of Val/Ver protocol: Section B
Description of the Non-Conformance		
1) In section B.1. of MR: a) PD has not incorporated the single line diagram (SLD) of the project activity to describe the generation of electricity at module level and then transfer to the grid. PD has also not elaborated about the energy conversions. b) Assessment team could not identify whose electrical characteristics are being referred here. PD to kindly specify. c) PD has not clarified the final voltage at delivery point & even the final delivery point is not being mentioned. 2) In section B.1. of MR: a) As per section B.6.5. of PDD version 6 dated 11-January-2021 the 298,072 MWh of annual electrical energy results to reduction of 275,305 tCO₂ per annum. PD is requested to clarify how this value denotes the generation and emission reductions for the entire life span (i.e., 25 Years) of the project activity. b) PD has not incorporated the single line diagram (SLD) of the project activity to describe the generation of electricity at module level and then transfer to the grid. PD has also not elaborated about the energy conversions. c) Assessment team could not identify whose electrical characteristics are being referred here. PD to kindly specify. d) PD has not clarified the final voltage at delivery point & even the final delivery point is not being mentioned. 3) In section B.1.1. of MR: PD is requested to clarify that the FAR is still open or closed. 4) In section C of MR: a) It is a CDM project activity or GS4GG project activity. Kindly clarify. b) As per section A.4. of PDD version 6 and also as per onsite observation during Site visit, project is implemented in State Gujrat. PD to kindly clarify the inconsistency. c) During onsite visit it is observed that the operations and maintenance are carried inhouse by the PD. Kindly clarify. d) CERs or VERs? e) Kindly provide the name and location of the substation. f) PP or PD? g) Kindly provide the location where net electricity supplied. h) PD to incorporate the total number of trainings provided during current monitoring period. i) PD to simplify the statement used and provide an elaborative view on how the data is aggregated and then ERs are calculated.		

j) PD has repeatedly mentioned about how net electricity is calculated. PD to brief about it in a single section, PD has not elaborated about frequency of measurement and QA/QC procedures. (No response in MR)					
k) Please clarify the term CDM Team.					
1 st Response from PP			Date	10-August-2023	
1) In section B.1. of MR:					
a. The relevant section has been updated and the Single line diagram (SLD) has been incorporated in the same.					
b. The characteristics are reference for the technical specification of the project, same has been updated in the section.					
c. The relevant information has been incorporated in the section stating the final voltage at delivery point.					
2) In section B.1. of MR:					
a. The said information i.e., electrical energy is of per annum and the same has been updated in the section.					
b. The same has been updated.					
c. The same has been updated and replied above.					
d. The same has been updated and replied above.					
3) The relevant section has been updated, the FAR is closed.					
4) In section C of MR:					
a. The project activity is of GS4GG and the same has been corrected in the relevant section.					
b. The relevant section has been corrected for the state (Location).					
c. The operation and maintenance are carried out inhouse by the PP, the same has been updated throughout the MR.					
d. The relevant section has been corrected i.e., VERs.					
e. The same has been updated in the relevant section.					
f. We would like to clarify that the PP is responsible for the data measurement, and other monitoring practices.					
g. The relevant information has been updated in the said section.					
h. The relevant information has been updated as per the training conducted in the current monitoring period and has also mentioned in the ER sheet provided.					
i. The relevant information has been updated and simplified.					
j. The relevant information has been updated.					
k. The term “CDM Team” is a general term used by the PP for its team which is responsible towards the Projects for Carbon Credit. As the PP has been involved in Many of the projects which refer CDM tools and methodologies the term CDM has been used. It has no relation with the project activity.					
1 st Assessment by Audit Team		Status	Closed	Date	12-October-2023
1) In section B.1. of MR:					
a. The information regarding the generation of electricity at module level and then transfer to the grid has been elaborated, also the energy conversions have been updated by PD and the Single line diagram (SLD) has been incorporated in the MR. The same has been reviewed and found correct. (Closed)					
b. The PD has specified characteristics are reference for the technical specification of the project, the same has been incorporated in the section of MR this information is reviewed and found correct and hence accepted by the assessment team. (Closed)					
c. The information regarding final voltage at delivery point & even the final delivery point has been incorporated the same has been checked in the MR and found correct.					
2) In section B.1. of MR:					

- a. The said information i.e., electrical energy is of per annum and the same has been updated in the section.
- b. The same has been updated.
- c. The same has been updated and replied above.
- d. The same has been updated and replied above.
- 3) The relevant section has been updated, the FAR is closed.
- 4) **In section C of MR:**
 - a. The project activity is of GS4GG and the same has been corrected by PD the same has been reviewed in the MR and found correct and hence accepted. **(Closed)**
 - b. The information has been incorporated in the section regarding location, section has been corrected for the state (Location) the assessment team has checked and confirmed the same.
 - c. The operation and maintenance are carried out in-house by the PD, and the same has been incorporated throughout the MR the same has been checked and found correct by the assessment team and hence accepted. **(Closed)**.
 - d. The relevant section has been corrected i.e., VERs.
 - e. The name and location of the substation have been incorporated in the MR the same has been checked and confirmed by the assessment team. **(Closed)**
 - f. The PD has clarified that PD is responsible for the data measurement, and other monitoring practices the same has been incorporated in the MR assessment team found this information justified hence accepted. **(Closed)**
 - g. The relevant information has been updated in the said section.
 - h. The relevant information regarding total number of trainings provided during the current monitoring period has been updated as per the training conducted in the current monitoring period and PD has also been mentioned in the ER sheet provided the same has been checked and found correct. **(Closed)**
 - i. The relevant information regarding aggregated and then ERs are calculated has been updated and simplified same has been reviewed and confirmed by the assessment team. **(Closed)**
 - j. The relevant information has been updated.
 - k. The term “CDM Team” is a general term used by the PD for its team which is responsible towards the Projects for Carbon Credit. As the PD has been involved in Many of the projects which refer CDM tools and methodologies the term CDM has been used. It has no relation with the project activity assessment team found this statement justified hence accepted. **(Closed)**

CAR#02 is successfully closed by the assessment team.

Type	Date	01-August-2023
CAR#03	Reference	Section of Val/Ver protocol; Section D
Description of the Non-Conformance		
1) In section D.1. of MR: PD has not clarified the inconsistency in the version number. Also, PD to further clarify the inconsistency in FVR regarding the version used for CEA database on page number 14 & 26. 2) In section D.2. of MR: a) PD has not Elaborated the JGSPL. b) PD has not clarified the description of SDG Indicator 8.5.1. c) The below mentioned training details are not applicable to the current monitoring period. PD to provide details about the trainings conducted during current monitoring period along with required evidences.		

d) PD has not clarified the Measuring/reading / recording frequency of SDG Indicator 13.2.1 e) PD has not specified the name of the testing agency f) PD has not updated the parameter of SDG Indicator 4.3.5 as per the PDD version 06					
1 st Response from PP			Date	10-August-2023	
1) The relevant section has been updated and the version for CEA database has been made in line with the latest PDD applicable to the current monitoring period. 2) In section D.2. of MR: a. The term JGSPL refers to “Juniper Green Solar Power Limited” the same has been updated in the section b. The relevant section has been updated. c. The relevant section has been updated with the training details applicable to the current monitoring period, also the relevant documents are being submitted with the DVR Responses. d. The relevant information has been updated in the relevant section. e. The relevant information has been updated. f. The relevant section has been updated as per the latest PDD applicable to the current monitoring period.					
1 st Assessment by Audit Team		Status	Closed	Date	12-October-2023
1) In section D.1. of MR: The relevant section has been updated and the version for CEA database has been made in line with the latest PDD applicable to the current monitoring period. The information has been reviewed and confirmed by the assessment team. (Closed) 2) In section D.2. of MR: a. The PD has specified that the term JGSPL refers to “Juniper Green Solar Power Limited” The same has been incorporated in the MR same has been reviewed and confirmed. (Closed). b. The relevant section has been updated. c. The assessment team confirms that the relevant section has been updated with the training details applicable to the current monitoring period, also the relevant documents are being submitted by PD same has been verified and found corrected and hence accepted (Closed) d. The relevant information has been updated in the relevant section. e. The relevant information has been updated. f. The relevant section has been updated as per the latest PDD applicable to the current monitoring period.					

Type	Date	01-August-2023
CAR#04	Reference	Section of Val/Ver protocol
Description of the Non-Conformance		
1) In section E.1. of MR: PD to elaborate the non-applicability of this section w.r.t to the project type. 2) In section E.1. of MR: a) PD to indicate specific clause of the methodology used. b) PD to justify how come the methodology is assuming and not being referred.		

- 3) **In section E.5. of MR:** Value of Net generation Estimation for Current Monitoring Period is found inconsistent with the registered PDD version 6 and ER Sheet Version 1.
PD is requested to update.
- 4) **In section E.5. of MR:** Value of ER Estimation for Current Monitoring Period is not consistent with the registered PDD version and ER Sheet version 01.
PD is requested to update.
- 5) **In section E.5.1. of MR:**
 - a) Number of days found inconsistent with the ER Sheet version 1. PD is requested to recalculate and update the no. of days for the current monitoring period.
 - b) Is this figure relevant to current monitoring period? If yes then PD to meticulously elaborate the applicability of the values w.r.t current monitoring period.
- 6) **In section E.6. of MR:**
 - a) PD is requested to also indicate about change in net generation of electricity for current monitoring period.
 - b) Project Developer to show calculation of PLF for the current monitoring period in the ER sheet and also show comparison between estimated and actual PLF.
 - c) Also, PD has not clarified the higher emissions achieved in this MP, as outlier by providing with the PLF data for 2 years (if available) or at least 1-year PLF data prior to this MP.
This data will allow assessment team to assess the ER calculations in line with GS MR template.
- 7) **In Appendix – 1 of MR:** Type of the meter is found inconsistent during site visit.
PD is requested to update.

1stResponse from PP		Date	10-August-2023
1) The section i.e., “Calculation of baseline value or estimation of baseline situation of each SDG Impact” is applicable and has been filled as per the latest template guideline for Monitoring Report. 2) In section E.1. of MR: a. The clause of the methodology has been mentioned in the same as footnote. b. The paragraph has been taken from the methodology and the reference for the same has been given as footnote. 3) The relevant section has been updated as per the latest PDD applicable to the current monitoring period. 4) The relevant section has been updated as per the latest PDD applicable to the current monitoring period. 5) In section E.5.1. of MR: a. The no. of dates has been corrected as per the Updated ER sheet for the current monitoring period. b. The relevant section has been updated as per the current monitoring period. 6) In section E.6. of MR: a. The relevant section has been updated and the information is included about the change as per the current monitoring period. b. The relevant section has been updated with the calculation of PLF in ER Sheet and also the comparisons for the same. c. The reason behind higher generation for this monitoring period unlike the previous one is due to the seasonal change of the year, the same has been updated. 7) The relevant documents for the Meter change/replacement are being submitted with the DVR responses.			
1stAssessment by Audit Team	Status	Closed	Date 12-October-2023

- 1) **In section E.1. of MR:** The information in section i.e., “Calculation of baseline value or estimation of baseline situation of each SDG Impact” is applicable and has been incorporated as per the latest template guideline for Monitoring Report same has been checked and confirmed by the assessment team. **(Closed)**
- 2) **In section E.1. of MR:**
 - a. The assessment team has confirmed that the clause of the methodology has been incorporated in in footnote the same has been checked and found working by the assessment team. **(Closed)**
 - b. The assessment team has confirmed that the reference for the same has been incorporated as a footnote. **(Closed)**
- 3) The assessment team confirms that the information regarding the value of Net generation Estimation for the Current Monitoring Period has been updated as per the latest PDD applicable to the current monitoring period the same has been checked and found consistent and hence accepted. **(Closed)**
- 4) The Value of ER Estimation for the Current Monitoring Period has been updated the same has been checked and found consistent with the registered PDD version and ER Sheet version 01 hence accepted **(Closed)**
- 5) **In section E.5.1. of MR:**
 - a. The no. of dates has been corrected as per the Updated in ER sheet for the current monitoring period same has been reviewed and confirmed **(Closed)**
 - b. The relevant section has been updated as per the current monitoring period values and the same has been checked and found consistent and hence accepted by the assessment team. **(Closed)**
- 6) **In section E.6. of MR:**
 - a. PD has indicated about change in the net generation of electricity for current monitoring period in the MR the same has been checked and confirmed by the assessment team **(Closed)**.
 - b. The relevant section has been updated with the calculation of PLF in the ER Sheet. Also, data regarding PLF has been provided by the PD **(Closed)**
 - c. The reason behind higher generation for this monitoring period has been incorporated and the same has been checked and confirmed by the assessment team. **(Closed)**.
- 7) **In Appendix – 1 of MR:** The documents for the Meter change/replacement are being submitted and the same has been checked and confirmed by the assessment team **(Closed)**

CAR#04 is successfully closed by the assessment team.



Description of Forward Action Requests raised by VVB:

Type	Date	DD Month YYYY		
FAR	Reference	Section of Val/Ver protocol		
Description of the Non-Conformance				
1st Response from PP		Date	DD Month YYYY	
1st Assessment by Audit Team	Status	Open/Closed	Date	DD Month YYYY
2nd Response from PP		Date	DD Month YYYY	
2nd Assessment by Audit Team	Status	Open/Closed	Date	DD Month YYYY

Declaration

All CARs, CLs, and FARs from the Verification

Total Number of CAR s	04	Total Number of CLs	02	Total Number of FAR s	00
Status of CARs	☐ Open ☒ Closed ☐ Turned to a FAR	Status of CLs	☐ Open ☒ Closed ☐ Turned to a FAR	Status of FARs	☐ Open ☐ Closed ☐ Turned to a FAR

7 COMPETENCE OF VERIFICATION TEAM AND TECHNICAL REVIEWER

Team Leader-



Certification Pvt. Ltd.

VKU.F50W. Competence Statement

COMPETENCE STATEMENT

Name	Barun Kumar
Nationality	Indian
Countries of Experience	India, South Africa, Kenya, Uganda, DR Congo, Zambia
Education Qualification	B.Sc. (Environmental Science & Water Management) M.Sc. (Ecology & Environmental Sciences)
Year of Experience	12 Years +
Area of Expertise	Climate Change & Environment
Eligible Sectoral Scope	TA 1.2 - Renewables TA 3.1 - Energy Demand TA 6.1 - Construction TA 7.1 - Transport

Roles

Project Trainee	NO
Validator/Verifier Trainee	NO
Validator	NO
Verifier	NO
Team Leader	YES
Technical Reviewer	YES
Local Expert (Country Wise)	NO
TA Expert (1.2, 3.1, 6.1, 7.1)	YES
Financial Expert	NO

Reviewed by	Vandana Gupta (Quality Manager)	Date	06/12/2022
Approved by	Vivek Kumar Ahirwar (Technical Manager)	Date	06/12/2022

**Validator/ Verifier****COMPETENCE STATEMENT**

Name	Niharika Kaushik
Nationality	Indian
Countries of Experience	India
Education Qualification	B.Sc. (Zoology Honours) M.Sc. (Environmental Sciences)
Year of Experience	2.5+ Years
Area of Expertise	Climate Change & Environment
Eligible Sectoral Scope	NA

Roles

Project Trainee	NO
Validator/Verifier Trainee	NO
Validator	YES
Verifier	YES
Team Leader	NO
Technical Reviewer	NO
Local Expert	NO
TA Expert (X.X)	NO
Financial Expert	NO

Reviewed by	Vandana Gupta (Quality Manager)	Date	09.05.2023
Approved by	Vivek Kumar Ahirwar (Technical Manager)	Date	09.05.2023

**Validator/ Verifier- Trainee****COMPETENCE STATEMENT**

Name	Anil Dhankar
Nationality	Indian
Countries of Experience	India
Education Qualification	B.Sc. (BCZ) M.Sc. (Environmental Science)
Year of Experience	9 months as Project Trainee in VKU
Area of Expertise	Climate Change & Environment
Eligible Sectoral Scope	NA

Roles

Project Trainee	NO
Validator/Verifier Trainee	YES
Validator	NO
Verifier	NO
Team Leader	NO
Technical Reviewer	NO
Local Expert (Country Wise)	NO
TA Expert (X.X)	NO
Financial Expert	NO

Reviewed by	Vandana Gupta (Quality Manager)	Date	07/07/2023
Approved by	Vivek Kumar Ahirwar (Technical Manager)	Date	07/07/2023

**Project Trainee****COMPETENCE STATEMENT**

Name	Priyanshee Modi
Nationality	Indian
Countries of Experience	India
Education Qualification	M.Sc. (Biotechnology) B.Sc. (Biotechnology)
Year of Experience	Fresher
Area of Expertise	NA
Eligible Sectoral Scope	NA

Roles

Project Trainee	YES
Validator/Verifier Trainee	NO
Validator	NO
Verifier	NO
Team Leader	NO
Technical Reviewer	NO
Local Expert (Country Wise)	NO
TA Expert (X.X)	NO
Financial Expert	NO

Reviewed by	Vandana Gupta (Quality Manager)	Date	05/06/2023
Approved by	Vivek Kumar Ahirwar (Technical Manager)	Date	05/06/2023

**Technical Reviewer****COMPETENCE STATEMENT**

Name	Sanjay Kumar K
Nationality	Indian
Countries of Experience	India
Education Qualification	B.E. (Civil Engineering) M. Tech (Environmental Engineering)
Year of Experience	20 Years +
Area of Expertise	Climate Change & Environment Sustainable Development GHG Footprints
Eligible Sectoral Scope	TA 1.2 - Renewables TA 3.1 - Energy Demand TA 6.1 - Construction

Roles

Project Trainee	NO
Validator/Verifier Trainee	NO
Validator	YES
Verifier	YES
Team Leader	YES
Technical Reviewer	YES
Local Expert (Country Wise)	YES
TA Expert (1.2, 3.1, 6.1)	YES
Financial Expert	YES

Reviewed by	Vandana Gupta (Quality Manager)	Date	03.03.2023
Approved by	Vivek Kumar Ahirwar (Technical Manager)	Date	03.03.2023

**History of the Document**

Version	Date	Amendment Summary*	Prepared By	Approved By
2.0	28/08/2023	Revisions done in all sections as per the requirement of GS4GG Standard	Vandana Gupta	Dr. Vikas Kumar Aharwal
1.1	22/07/2021	NA	Ayushi Garg	Vikas Aharwal
1.0	17/03/2020	NA	Ayushi Garg	NA

*Amendment Summary adopted in VKU System on 12.10.2022