

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



Project Title:	200 MW Wind Power Project in Tamil Nadu by Orange Sironj
Monitoring Period:	01/01/2022 to 31/12/2022 (Inclusive of both days)
GS project ID:	GS 6290
Internal ID:	TQC 9023
Customer:	Infinite Environmental Solutions LLP
Date:	11/09/2024
Revision:	03

SUMMARY			
Reference No.	Date (first version)	Version No.	Date (last version)
A+SH_SYST_TQC_GS_VER_8323	05/02/2024	03	11/09/2024
GS4GG Verification			
GS4GG Certified Product (sought):		GHG Emission Reductions	
GS4GG SDG Impact Statement (sought):		Impact Certification	
General Information			
Client	Infinite Environmental Solutions LLP		
Project Title	200 MW Wind Power Project in Tamil Nadu by Orange Sironj		
Project Participants	Orange Sironj Wind Power Pvt Ltd.		
Project Location	Poovani District, Thootukudi (Tuticorin), Tamil Nadu, India		
Contact Person	Mr. Murli Krishnam Raju M		
Monitoring Period	01/01/2022 to 31/12/2022 (Inclusive of both days)		
GS4GG Version: GS4GG Principles and Requirements 1.2 GS4GG Activity Requirements: RE Activity Requirements 1.4 GS4GG: GHG Emissions Reduction & Sequestration Product Requirements, Version 2.2 Applied Methodology Version: ACM0002: Grid-connected electricity generation from renewable sources -Version 18.1(CP1) ¹ The following tools and guidance’s have been followed (References): • Tool to calculate the emission factor for an electricity system² - Version 07.0³ • Tool for the demonstration and assessment of additionality- Version 07.0.0		GS4GG Sectoral Scope: 2 UNFCCC CDM Sectoral Scope: 1 Technical Area: 1.2	
Published Monitoring Report, Version 01 Date: 18/06/2023		Final Monitoring Report, Version 04 Date: 30/08/2024	
GS4GG Project Design Document Version: 05 Date: 30/12/2019			
Estimated SDG Goals for current MP: SDG 7 (Affordable and clean energy): 635,976 MWh for current monitoring period (ex-ante; 635,976 MWh/year) SDG 8 (Decent work and economic growth): 01 trainings and 15 nos. of employees (Ex-ante estimates: 01 training/year, employment to 15/year) SDG 13 (Climate action): 613,844 tCO ₂ e for current monitoring period (ex-ante; 613,844 tCO ₂ e/year)			
Actual SDG Goals achieved during current monitoring period: SDG 7 (Affordable and clean energy): 530,885.97 MWh SDG 8 (Decent work and economic growth): Trainings Provided – 21 nos. No. of Jobs generated - 77 nos.			

¹ <https://cdm.unfccc.int/methodologies/DB/XP2LKUSA61DKUQC0PIWPGWDN8ED5PG>

² <http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>

³ <http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>

Income generation: 104,849,000 INR SDG 13 (Climate action): 512,411 tCO ₂ e.
Selected Sustainable Development Goals (SDGs): 7, 8 and 13
Verification Summary
LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by Infinite Environmental Solutions LLP (PP representative) & Orange Sironj Wind Power Pvt. Ltd. (PP) to perform the verification of "200 MW Wind Power Project in Tamil Nadu by Orange Sironj" (Ref. No. GS 6290⁴) under GS4GG for the monitoring period from 01/01/2022 to 31/12/2022 (inclusive of both dates) applying the methodology ACM0002, version 18.1. The management of Orange Sironj Wind Power Pvt. Ltd is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions. A desk review and a site visit have been conducted to verify the data submitted in the monitoring report. Applus+ Certification confirms the following have been reviewed: - The GS4GG PDD version 05; - Monitoring report; - The applied monitoring methodology; - Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board; - The Gold Standard for Global Goals "Principles and Requirements" Version 1.2 and GS4GG guideline and related Annex. - All information and references relevant to the project activity's resulting in emission reductions. Orange Sironj Wind Power Pvt. Ltd has implemented a Greenfield "200 MW Wind Power Project in Tamil Nadu by Orange Sironj" a large-scale grid-connected wind power project in Poovani District, Thootukudi (Tuticorin), Tamil Nadu in India. The total installed capacity of the project activity is 200 MW consisting of 100 WTGS of 2.0 MW each. Electricity generated from the project activity is exported to the unified Indian grid. The project activity has generated 530,885.97 MWh of electricity and abated 512,411 tCO₂e during the current monitoring period from 01/01/2022 to 31/12/2022 (Both days included) ^{12/}. Applus+ Certification confirms that the project is implemented in accordance with the validated GS4GG PDD. The monitoring plan complies with the applied methodology ACM0002, version 18.1^{4/} and the Gold Standard for Global Goals "Principles and Requirements" V1.2, GS4GG guideline^{7/}. The monitoring has been carried out in accordance with the monitoring plan. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the project's GHG emissions and the resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring and its associated documents. Based on the information reviewed and evaluated Applus+ Certification confirms that the implementation of the project has resulted in 512,411 tCO₂e emission reductions during the current monitoring period: 01/01/2022 to 31/12/2022 (Both days included). All CARs /CRs/ FARs raised during verification resolved prior to submitting a request for issuance. Please refer Appendix 1 of this report. Total numbers of findings: CLs: 04, CARs: 03, FARs: Nil

ASSESSMENT TEAM		
Team Members	Type of Resource ⁵	Organization (for OEs)
Lead Auditor: Mr. Jitendra Mohan Singh	☐ IR ☐ EI ☒ OE	M/s True Quality Certifications Private Limited

⁴ [GSF Registry \(goldstandard.org\)](https://goldstandard.org)

⁵ IR (Internal Resource); EI (External Individual); OE (Outsourced Entity)

ASSESSMENT TEAM		
Team Members	Type of Resource ⁵	Organization (for OEs)
Auditor: Mr. Amit Rai	☐ IR ☐ EI ☒ OE	M/s True Quality Certifications Private Limited
Technical Reviewer: Mr. Simon Shen	☐ IR ☒ EI ☐ OE	LGAI Technological Center, S.A.

ABBREVIATIONS	
ACM	Approved Consolidated Methodology
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CER	Certified Emission Reduction
CL/CR	Clarification Request
CM	Combined Margin
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
CP	Crediting Period
DNA	Designated National Authority
EF	Emission Factor
EIA	Environmental Impact Assessment
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GS4GG (or GS)	Gold Standard for Global Goals
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-Governmental Organization
SDG	Sustainable Development Goal
TAC	Gold Standard Technical Advisory Committee
OM	Operational Margin
PDD	Project Design Document
PP	Project Participant

UNFCCC	United Nations Framework Convention for Climate Change
VVB	Validation and Verification Body
VVS	Validation and Verification Standard

Table of Content

1.	INTRODUCTION	7
1.1	Objective	7
1.2	Scope	7
1.3	Description of the project activity	8
2.	METHODOLOGY	8
2.1	Appointment of the assessment team	9
2.2	Document review.....	9
2.3	On site assessment and follow up interviews	9
2.4	Quality of evidences.....	12
2.5	Reporting of findings	13
2.6	Internal Quality Control.....	13
3.	VERIFICATION FINDINGS	14
3.1	FARs from Validation / Previous Verification	14
3.2	Project Implementation in accordance with the registered Project Design Document ...	14
3.3	Compliance of the Monitoring Plan with the Monitoring Methodology	24
3.4	Completeness of Monitoring	24
3.5	SDG Outcomes Monitoring	32
3.6	Assessment of Data and Calculation of Greenhouse Gas Emission Reductions.....	33
3.7	Management and Operational System	35
4.	REFERENCE.....	36
5.	FINAL VERIFICATION STATEMENT	37

Appendix:

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

Appendix 2: Calibration details of monitoring meters.

Appendix 3: Audit Team CVs

Appendix 4: Audit Technique

1. INTRODUCTION

1.1 Objective

LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by Orange Sironj Wind Power Pvt Ltd. (PP) and Infinite Environmental Solutions LLP (PP representative) to perform 4th verification of “200 MW Wind Power Project in Tamil Nadu by Orange Sironj” applying the methodology ACM0002, version 18.1^{/4/} and GS4GG guidelines. Gold Standard projects must undergo periodic audits and verification of emission reductions as the basis for issuance of Gold Standard VERs. The objective of the verification work is to assess the compliance with the requirements of paragraph 62 of the CDM Modalities and Procedures as well as the GS4GG guidelines and relevant Principles and Requirements. According to this assessment Applus+ Certification shall:

- Ensure that the project activity has been implemented and operated as per the registered GS PDD^{/1/} and transitional documents for registration and that all physical features (technology, project equipment, monitoring and metering equipment) of the project are in place;
- Ensure that the published MR^{/2/} and other supporting documents provided are complete, verifiable and in accordance with applicable CDM VVS for project activities version 03.0^{/4/} for the project activity and Gold Standard i. e. GS4GG requirements^{/7/};
- Ensure that the actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology;
- Evaluate the data recorded and stored as per the ACM0002, version 18.1^{/4/}.

1.2 Scope

The verification scope encompasses an independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the VVB. The verification is based on the submitted monitoring report, GS PDD^{/1/}, the applied monitoring methodologies^{/4/}, relevant decisions, clarifications and guidance from the CMP and the EB, GS4GG guidelines^{/7/} and any other information and references relevant to the project activity's resulting emission reductions. These documents are reviewed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures, GS4GG guideline and relevant Principles and Requirements, as well as their related rules and guidance.

Based on the requirements in the CDM VVS for project activities, version 03.0 for the project activity as well as the GS4GG guideline, Applus+ Certification has applied a risk-based approach for the verification of the project. The principles of accuracy, completeness, relevance, reliability and credibility were combined with a conservative approach to establish a traceable and transparent verification opinion.

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

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

1.3 Description of the project activity

The project activity is installation of 200 MW wind power plant consisting of 100 WTGs of 2.0 MW each at in Poovani District, Thootukudi (Tuticorin), Tamil Nadu in India. The electricity generated by the project activity is exported to Indian Grid.

The project activity primarily aims at reducing Green House Gas (GHG) emissions through utilization of wind for generation of electricity. This is 4th monitoring period. During the current monitoring period: 01/01/2022 to 31/12/2022 (Both days included), the project activity has generated 530,885.97 MWh of electricity and abated 512,411 tCO₂e ^{/2/}.

The details commissioning of the project is provided as below which was confirmed based on commissioning certificates^{/3/};

S. No.	WTGs (Nos)	Date of Commissioning	Commercial operation as per SECI
1	50	05/03/2019	07/03/2019
2	50	13/03/2019	14/04/2019

WTGs wise commissioning dates and the technical specifications of the projects verified during the site visit are provided in Section 3.2 of this report.

2. METHODOLOGY

LGAI Technological Center, S.A. (Applus+ Certification) – Hereinafter referred as Applus+ Certification -approach to the verification is a two-stage process

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

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

In the 2nd stage, Applus+ Certification verified the implementation of the monitoring plan and the data presented in the Monitoring Report for the period in question. This involved site visit and a desk review of the Monitoring Report. This Verification Report describes the findings of this assessment.

In the 2nd stage, using the Verification Checklist, Applus+ Certification verified the implementation of the monitoring plan and the data presented in the Monitoring Report for the period in question. This involved interviewing PP representative during the site visit and a desk

review of the Monitoring Report. This Verification Report describes the findings of this assessment.

2.1 Appointment of the assessment team

According to the sectoral scope / technical area and experience in the sectoral or national business environment, Applus+ Certification has composed an assessment team in compliance with the Contract Review and Assessment Team appointment rules in the internal Quality Management System of Applus+ Certification.

The composition of the Assessment team (Applus+ Certification team) has been approved by Applus+ Certification during the Contract Review process ensuring that the required skills are covered.

The qualification levels of Assessment Team members that are assigned by aforementioned appointment rules are as presented below:

- Lead Auditor (LA)
- Auditor (A)
- Technical Expert (TE)
- Technical Reviewer (TR)
- Any of the above-mentioned roles in training (iT, e.g. AiT for auditor in training).

The sectoral scope/technical area required knowledge linked to the applied methodology(ies) is covered by the Assessment Team.

Name	Role	SS Coverage	TA Coverage	Financial aspect	Host country experience
Mr. Jitendra Mohan Singh	LA/TE	YES	YES	NA	YES
Mr. Amit Rai	A	YES	YES	NA	YES
Mr. Simon Shen	TR/TE	YES	YES	NA	NA

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

2.2 Document review

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

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

2.3 On site assessment and follow up interviews

Duration of on-site inspection: 31/10/2023 -01/11/2023				
Sr. No.	Activity performed on-site	Site location	Date	Team member
1.	1) an assessment of the implementation and operation of the GS4GG project activity as per the PDD 2) a review of information flows for generating, aggregating and reporting of the monitoring parameters 3) interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the Monitoring Plan 4) a cross-check between information provided in the MR and data from other sources 5) a check of the monitoring equipment including calibration performance, and observations of monitoring practices against the requirements of the PDD and the applied methodology 6) a review of calculations and assumptions made in determining the GHG data and ERs, and 7) an identification of QA/QC procedures in place to prevent, or identify and correct, any errors or omissions in the reported monitoring parameters	Poovani District, Thootukudi (Tuticorin), Tamil Nadu in India	31/10/2023 & 01/11/2023	Mr. Jitendra Mohan Singh (LA) Amit Rai (Auditor)

During the physical site visit, following stakeholders were interviewed:

Sr. No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Balasubramaniam	Mr. V	Senior Manager (PP representative)	31/10/2023 - 01/11/2023	Project implementation status, Baseline emissions, ER calculations,	Mr. Jitendra Mohan Singh (LA) And Mr. Amit Rai (Auditor)

					SDGs monitoring, employment, grievance etc.	
2.	Nixon	Mr. S	Manager (PP representative)	31/10/2023 - 01/11/2023	Project Monitoring and reporting, calibration, employment, trainings	
3.	G.	Mr. Ramakrishnan	Assistant Manager (PP representative)	31/10/2023 & 01/11/2023	Project Monitoring and reporting, O & M, calibration, employment, trainings	
4.	Kumar	Mr. Senthil	Local Stakeholder	31/10/2023	Local area development, Local issues, Grievances, SDGs	
5.	Kumar	Mr. M. Naveen	Local Stakeholder (Farmer)	31/10/2023	Local area development, Local issues, Grievances, SDGs	

As referred above, the objective of the site visit assessment was to verify the following issues:
 Confirm the implementation and operation of the project in line with GS4GG PDD^{/1/}:

- The project activity is implemented as per the registered GS4GG PDD^{/1/} and there is no change in capacity or design of the project activity since commissioning. Same was confirmed during the on-site visit and further cross checked with commissioning certificates^{/3/}, PPA^{/15/} and interviews with PP/Site in charge and JMRS as well as invoices^{/17/} raised by PP towards state utility;

- Review the data flow for generating, aggregating and reporting the monitoring parameters:
- Electricity generation monitoring and billing procedures are followed at the project site in line with the state utility practice and are in line with the registered GS4GG PDD^{/1/}. These were confirmed during the interviews with PP. The verification team also checked entire monthly JMRs issued by the state utility for the project activity with the values provided in the ER sheet for the calculations of the emission reductions;
- Confirm the correct implementation of procedures for operations and data collection:
During on-site visit and interviews with PP, it was confirmed that implementation of procedures for operations and data collection is in line with registered GS4GG PDD^{/1/}. Service provider is responsible for the operations, maintenance as well as maintaining other technical data of the project activity. Performance and operation data of wind project is controlled and maintained by O & M Services provider in CMS through dedicated software and SCADA system which provide operation status, break down on continuous basis;
- Cross-check the information provided in the MR documentation with other sources:
The information provided in the MR was crosschecked with the commissioning certificates, PPA, calibration certificates^{/8/} and Monthly Meter reading reports issued by DISCOM and invoices are used for cross-checking;
- Check the monitoring equipment against the requirements of the GS4GG PDD and the approved methodology, including calibrations, maintenance, etc.:
Monitoring meters are checked with the Monthly Meter reading reports, interviews with PP and calibration is checked with the calibration certificates issued by State Utility authorized third parties;
- Review the calculations and assumptions used to obtain the GHG data and ER:
Calculation procedures and monthly generation data is checked with Monthly Meter reading reports and crosschecked with invoices;
- Identify if the quality control and quality assurance procedures are in place to prevent or correct errors or omissions in the reported parameters:

During Physical site inspection and interviews with PP, it was confirmed that quality control and quality assurance procedures^{/11/} are in place. Metering arrangements & billing procedure is defined and controlled by state utility and PP do not have control on it. Assessment team checked all the monthly generation values which were crosschecked with the invoices and found that emission reductions are calculated^{/2/} conservatively.

Thus, to verify the implementation of project activity, onsite operation & maintenance, monitoring & management practices; assessment team has conducted interviews with onsite in-charge, O&M team and also had a detail discussion with the PP representative and reviewed third party statutory documents i.e. Commissioning certificates, Power Purchase Agreements, Complete set of Monthly Meter reading reports covering monitoring period, Invoice (for cross check of Net electricity supplied to the grid), training records^{/9/}, Plant logbook/breakdown log^{/6/}, complaint/feedback register^{/13/} and other relevant records.

2.4 Quality of evidences

Sufficient evidence covering the full verification period in the required frequency is available to verify the figures stated in the final Monitoring Report, Version 04^{/2/}. Specific cross-checks have

been done in cases that further sources were available. The monitoring report's figures were checked by the assessment team against the raw data. The data collection system meets the requirements of the monitoring plan as per the methodology.

2.5 Reporting of findings

As an outcome of the verification process, the assessment team can raise different types of findings.

Where a non-conformance arises the assessment team shall raise a Corrective Action Request (CAR). A CAR is issued, where:

- Non-compliance with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;
- Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

The assessment team shall raise a Clarification Request (CL) if information is insufficient or not clear enough to determine whether the applicable CDM/GS requirements have been met.

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

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

Please refer Appendix 1 of this report. Total Numbers of findings: CLs: 04, CARs: 03, FARs: 00

2.6 Internal Quality Control

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

3. VERIFICATION FINDINGS

3.1 FARs from Validation / Previous Verification

This is the 4th verification for the project activity and **one** FARs envisaged from last performance review document of this project activity and successfully closed by VVB. Refer Appendix 1 of this report for details.

3.2 Project Implementation in accordance with the registered Project Design Document

The project activity has been implemented as described in the registered GS4GG PDD^{/1/}. The installed capacity of the project is 200 MW consisting of 100 WTGs of 2.0 MW each. The same has been verified during the on-site inspection and through commissioning certificates^{/3/}. The verification team confirms that all physical features of the project activity including data collecting system has been implemented in accordance with the validated GS4GG PDD^{/1/}. The project activity has supplied electricity to Indian grid.

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

Plant is located in the Poovani District, Thootukudi (Tuticorin), Tamil Nadu, India. The location details are provided below. Verification team has checked the locations of the project activity during the physical site visit using google map and found consistent with the registered GS4GG PDD^{/1/}. Further, VVB verified the coordinates with GPS meter during the on-site visit and cross checked with Google earth software independently and observed coordinates are correctly provided^{/5/}.

S. No.	WTGs	Latitude	Longitude
1	GPV-003	77° 59' 52.64"E	8°49'48.53"N
2	GPV-004	77° 55' 28.86" E	8°47'28.29"N
3	GPV-005	77° 57' 53.86"E	8°47'52.95"N
4	GPV-007	77° 55' 41.95"E	8°48'37.92"N
5	GPV-009	77° 57'26.15"E	8°49'16.13"N
6	GPV-010	77° 58'35.36"E	8°51'36.10"N
7	GPV-011	77° 55'37.35"E	8°46'45.70"N
8	GPV-012	77° 55'46.12"E	8°49'50.67"N
9	GPV-013	77° 55'8.16"E	8°49'15.14"N
10	GPV-016	77° 56'51.85"E	8°49'35.66"N
11	GPV-017	77° 57'20.34"E	8°48'58.14"N
12	GPV-019	77° 56'41.27"E	8°48'18.77"N
13	GPV-020	77° 55'28.90"E	8°47'3.03"N
14	GPV-029	77° 55'27.56"E	8°45'39.22"N
15	GPV-085	77° 58'31.60"E	8°48'32.05"N
16	GPV-094	77° 55'9.04"E	8°46'33.73"N
17	GPV-095	77° 57'58.20"E	8°49'5.99"N
18	GPV-165	77° 52'58.34"E	8°46'40.20"N
19	GPV-175	77° 58'38.43"E	8°52'4.94"N
20	GPV-228	77° 53'54.07"E	8°46'4.63"N
21	GPV-030	77° 59'6.81"E	8°47'59.52"N
22	GPV-297	77° 56'9.84"E	8°45'45.68"N
23	GPV-390	77° 59'32.11"E	8°47'23.59"N
24	GPV-469	77° 57'51.91"E	8°46'19.47"N
25	GPV-472	77° 53'58.35"E	8°46'31.75"N
26	GPV-525	77° 57'12.51"E	8°52'7.95"N
27	GPV-527	77° 54'51.48"E	8°45'19.25"N
28	GPV-529	77° 57'17.46"E	8°47'19.32"N
29	GPV-530	77° 59'34.72"E	8°51'57.79"N
30	GPV-539	77° 55'46.90"E	8°48'55.75"N
31	GPV-545	77° 59'16.80"E	8°52'54.88"N
32	GPV-555	77° 59'23.49"E	8°57'39.57"N
33	GPV- 560	77° 58' 49.17" E	8°54'54.42"N
34	GPV- 676	77° 55'57.01" E	8°49'26.56"N
35	GPV- 690	77° 56'19.68" E	8°47'25.52"N
36	GPV- 696	77° 54'27.77" E	8°47'23.14"N
37	GPV- 730	77° 59'30.80" E	8°48'28.33"N
38	GPV- 731	77° 59'28.56" E	8°48'46.72"N
39	GPV- 002	78° 2' 56.28" E	8°54'28.21"N
40	GPV- 006	78° 2' 19.57" E	8°53'25.71"N
41	GPV- 018	78° 2' 18.87" E	8°51'33.34"N
42	GPV- 023	78° 1' 12.19" E	8°51'6.34"N
43	GPV- 026	78° 2' 43.18" E	8°53'9.73"N
44	GPV- 027	78° 2' 54.87" E	8°50'19.87"N
45	GPV- 130	78° 0' 34.54" E	8°51'27.92"N
46	GPV- 151	78° 4' 52.55" E	8°54'23.70"N
47	GPV- 227	78° 1' 41.52" E	8°51'26.51"N
48	GPV- 021	78° 0' 14.33" E	8°58'24.99"N

49	GPV- 022	78° 3' 3.69" E	8°55'39.59"N
50	GPV- 028	78° 3' 16.68" E	8°56'39.79"N
51	GPV- 256	78° 3' 0.34" E	8°59'7.96"N
52	GPV- 269	78° 3' 48.50" E	8°58'38.32"N
53	GPV- 290	78° 2' 59.08" E	8°51'22.11"N
54	GPV- 310	78° 3' 34.77" E	8°56'19.15"N
55	GPV- 318	78° 0' 17.32" E	8°48'56.47"N
56	GPV- 321	78° 2' 40.53" E	8°50'38.44"N
57	GPV- 335	78° 3' 31.73" E	8°54'37.30"N
58	GPV- 373	78° 3' 50.77" E	8°58'15.90"N
59	GPV- 526	78° 2' 30.73" E	8°50'37.43"N
60	GPV- 528	78° 2' 46.27" E	8°53'44.03"N
61	GPV- 531	78° 3' 6.85" E	8°58'43.55"N
62	GPV- 547	78° 3' 26.27" E	8°57'19.84"N
63	GPV- 487	78° 3' 11.25" E	8°58'9.67" N
64	GPV- 523	78° 2' 21.60" E	8°52'41.20"N
65	GPV- 565	78° 2' 52.69" E	8°59'39.96"N
66	GPV- 641	78° 2' 12.49" E	8°59'19.31"N
67	GPV- 642	78° 4' 15.74" E	8°55'43.28"N
68	GPV- 691	78° 2' 13.56" E	8°59'44.43"N
69	GPV- 698	78° 2' 28.26" E	8°50'11.20"N
70	GPV- 699	78° 2' 57.52" E	8°54'5.00"N
71	GPV- 355	78° 6' 57.09" E	8°58'19.68"N
72	GPV-398	78° 4' 28.01" E	9°0'4.53"N
73	GPV- 542	78° 4' 21.08" E	8°59'18.45"N
74	GPV- 074	78° 5' 7.17" E	8°59'51.80"N
75	GPV- 077	78° 5' 6.28" E	8°59'31.82"N
76	GPV- 078	78° 5' 7.60" E	8°58'45.72"N
77	GPV- 070	78° 5' 10.44" E	8°58'25.54"N
78	GPV- 234	78° 5' 42.94" E	8°56'40.59"N
79	GPV- 307	78° 6' 7.82" E	8°56'54.64"N
80	GPV- 050	78° 6' 14.28" E	8°57'32.97"N
81	GPV- 235	78° 6' 21.76" E	8°57'59.14"N
82	GPV- 032	78° 6' 23.73" E	8°59'17.31"N
83	GPV- 033	78° 6' 40.65" E	8°58'55.39"N
84	GPV- 543	78° 6' 34.98" E	8°56'11.07"N
85	GPV- 720	78° 1' 52.37" E	8°50'42.14"N
86	GPV- 724	78° 2' 12.75" E	8°52'59.70"N
87	GPV- 725	78° 4' 12.32" E	8°55'0.94"N
88	GPV- 726	78° 4' 6.75" E	8°56'3.89"N
89	GPV- 727	78°4' 20.29" E	8°59'40.27"N
90	GPV- 058	78° 7' 47.73" E	8°59'1.25"N
91	GPV- 061	78° 7' 46.52" E	8° 59'29.96"N
92	GPV- 100	78° 8' 15.02" E	8°58' 39.08"N
93	GPV- 161	78° 7' 48.95" E	8°56'26.36"N
94	GPV- 367	78° 7' 48.95" E	8°58'26.20"N
95	GPV-068	78° 6' 17.75" E	9°0'1.26"N
96	GPV- 125	78° 9' 19.85" E	8°57'11.12"N
97	GPV- 349	78° 9' 14.75" E	8°58'6.34"N
98	GPV- 541	78° 9' 43.10" E	8°57'33.94" N

99	GPV- 728	78° 8' 0.92" E	8°57'40.43" N
100	GPV- 729	78° 7' 43.08" E	8°55'53.55" N

The technology employed by the Project Activity includes the generation of renewable electrical energy by harnessing wind. Thus, this project actually displaces the electricity in the grid which is essentially fossil-fuel based to supply the generated electricity to the Indian Grid. The generation and consumption electricity from the Project Activity is monitored continuously through the energy meters at project site & substations. The data is used for the calculation of exports to the grid and imports from the grid.

Technical specifications of the project activity provided in the section B.1 of the MR is found consistent with the registered GS PDD. Same are confirmed during the on-site inspection and though commissioning certificates^{3/} and found consistent with registered PDD^{1/}. Specifications of PA is as follows:

Parameter	Specification
Model: G114-2.0 MW CS Max Power	
General data	
Make of WTG	Gamesa
Number of Blades	3
Design Conditions of WTGs	
Rated Power (MW)	2
Annual Average wind speed(m/s)	6.5
Turbulence intensity (%)	18
Reference 10-minute wind speed in 50 years(m/s)	40
Extreme wind speed in 50 years over a 3 - second average(m/s)	56
Hub Height(m)	106
Rotor	
Pitch control hydraulic system	Independent hydraulic actuators for each blade that provide a rotation capacity of between -5° and 87° and a system of accumulators which ensure feathering in the event of an emergency
Diameter(m)	114
Swept Area(m ²)	10,207
Wind speed(rpm)	13.07
Blades	
Length	56m
Weight (t) t, min -1.5	11.5
Blade cord (maximum/ minimum) (m)	3.865

Torsion (°)	Max 25, min -1.5
Gearbox	
Type	1 stage planetary / 2 parallel
Generator	
Type	Asynchronous double-feed unit with 4 poles, coil rotor and slip rings.
Nominal power (kW)	2,170 (stator + rotor)
Voltage (Vac)	690
Frequency (Hz)	50 / 60
Transformer	
Type	Three-phase, dry-type encapsulated
Frequency (Hz)	50 / 60
Insulation class	F or H

The commissioning dates of individual WTG is provided below. The commissioning dates are verified with the commissioning certificates issued by the state utility and found correct.

Feeder	Location	COD
Feeder-01	GPV023	05/03/2019
	GPV560	13/04/2019
	GPV545	13/04/2019
	GPV525	13/04/2019
	GPV010	13/04/2019
	GPV175	13/04/2019
	GPV530	13/04/2019
	GPV130	13/04/2019
Feeder-02	GPV027	05/03/2019
	GPV526	05/03/2019
	GPV698	05/03/2019
	GPV720	05/03/2019
	GPV290	05/03/2019
	GPV018	05/03/2019
	GPV006	05/03/2019
	GPV724	05/03/2019
	GPV699	05/03/2019
	GPV528	05/03/2019
	GPV026	05/03/2019
	GPV523	05/03/2019
	GPV726	05/03/2019
	GPV725	05/03/2019
	GPV642	05/03/2019
	GPV547	05/03/2019
	GPV335	05/03/2019
	GPV321	05/03/2019

Feeder-03	GPV310	05/03/2019
	GPV028	05/03/2019
	GPV022	05/03/2019
	GPV002	05/03/2019
	GPV555	05/03/2019
	GPV021	05/03/2019
	GPV151	13/04/2019
Feeder-04	GPV487	13/04/2019
	GPV373	13/04/2019
	GPV269	13/04/2019
	GPV531	13/04/2019
	GPV542	13/04/2019
	GPV727	13/04/2019
	GPV398	13/04/2019
	GPV074	13/04/2019
	GPV077	13/04/2019
	GPV068	13/04/2019
	GPV032	13/04/2019
	GPV691	13/04/2019
	GPV565	13/04/2019
	GPV641	13/04/2019
	GPV256	13/04/2019
	GPV078	13/04/2019
	GPV070	13/04/2019
Feeder-05	GPV061	13/04/2019
	GPV058	13/04/2019
	GPV349	13/04/2019
	GPV100	13/04/2019
	GPV367	13/04/2019
	GPV541	13/04/2019
	GPV125	13/04/2019
	GPV729	13/04/2019
	GPV161	13/04/2019
	GPV728	13/04/2019
	GPV033	13/04/2019
	GPV543	13/04/2019
	GPV234	13/04/2019
	GPV307	13/04/2019
	GPV355	13/04/2019
	GPV235	13/04/2019
	GPV050	13/04/2019
Feeder-06	GPV696	05/03/2019
	GPV004	05/03/2019
	GPV094	05/03/2019
	GPV011	05/03/2019
	GPV020	05/03/2019
	GPV017	05/03/2019
	GPV009	05/03/2019
	GPV690	05/03/2019
	GPV019	05/03/2019

	GPV227	05/03/2019
	GPV527	05/03/2019
	GPV165	13/04/2019
	GPV472	13/04/2019
	GPV228	05/03/2019
	GPV029	13/04/2019
	GPV297	13/04/2019
Feeder-07	GPV013	05/03/2019
	GPV007	05/03/2019
	GPV539	05/03/2019
	GPV012	05/03/2019
	GPV016	05/03/2019
	GPV085	05/03/2019
	GPV390	05/03/2019
	GPV730	05/03/2019
	GPV731	05/03/2019
	GPV676	05/03/2019
	GPV005	05/03/2019
	GPV030	05/03/2019
	GPV529	05/03/2019
	GPV095	13/04/2019
	GPV318	05/03/2019
	GPV469	13/04/2019
	GPV003	13/04/2019

The operation of the project activity complies with all statutory requirements as the PD is submitting the monthly invoice to state utility. The monitoring data is recorded on continuous basis and available on hourly/daily basis on SCADA software. The company has out sourced Siemens Gamesa Renewable Power Private Limited and the same is responsible for overall operation & maintenance including monitoring/data recordings. There is no event or situation including emergency situations occurred during this monitoring period which has impacted the applicability of methodology. The breakdown report for this monitoring period has been verified from logbooks^{7/}. No unforced shutdown/breakdown was observed.

Based on interview with PP representative during the on-site inspection and reviewed of commissioning certificates^{3/}, the verification team was able to confirm that the project implementation is in accordance with the project description contained in the registered GS4GG PDD^{1/}.

Project proponent has applied corrections in ex-ante data/parameter in this monitoring period which was typo error in registered PDD. In Registered PDD, the data/parameters were indicated as $EF_{OM,y}$, $EF_{BM,y}$, & $EF_{CM,y}$. The same is corrected as $EF_{grid,OM,y}$, $EF_{grid,BM,y}$, & $EF_{grid,CM,y}$ in Section B.2.2 of MR. The corrected ex-ante data/parameters are in line with the applied Tool 07: Tool to calculate the emission factor for an electricity system, version 7.0, thus acceptable to VVB.

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

Milestone of the project activity	Timeline	Assessment by the verification team
Registration of the project activity under	Registered	The project webpage was checked to confirm the same https://registry.goldstandard.org/projects/

GS4GG Principles and Requirements version 1.2		details/1096
Crediting period		
1 st monitoring period	07/03/2019 to 30/09/2019 (both dates included)	This was 1 st monitoring period under 1 st crediting period.
2 nd monitoring period	01/10/2019 to 31/12/2020 (both dates included)	This is 2 nd monitoring period under 1 st crediting period.
3 rd monitoring period	01/01/2021 to 31/12/2021 (both dates included)	This was 3 rd monitoring period under 1 st crediting period.
4 th monitoring period	01/01/2022 to 31/12/2022 (both dates included)	This is 4 th (Current) monitoring period under 1 st crediting period.

Assessment of actual emission reductions with the estimate emission reductions in PDD^{1/}:

Estimated GS VERs (Emission Reductions) as per registered GS4GG PDD, version 05	As per registered GS4GG PDD (version 05), the ex-ante estimated GS VERs (emission reductions) for 365 days is 613,844 tCO ₂ e and for this monitoring period, total days are 365. Accordingly, the estimated GS VERs is 613,844 tCO ₂ e. Please refer summary tab of ER calculation Spread sheet ^{2/} . Hence, the estimated ex ante amount of GS VERs (emission reductions) for current monitoring period is 613,844 tCO ₂ e.
Actual GS VERs (Emission Reductions) for the monitoring period	512,411 tCO ₂ e
Is any increase of GS VERs occurred?	The ex-ante value of GS VERs (emission reductions) during the current monitoring period are estimated to be 613,844 tCO ₂ e, whereas actual GS VERs (emission reductions) achieved are 512,411 tCO ₂ e (Rounded Down), which is 16.52% lower than the estimated GS VERs (emission reductions) ^{2/} . Thus, no increase in GS VERs.
Reason for increase of GS VERs	There is no increase in GS VERs from estimated GS VERs during the current monitoring period. The emission reductions achieved during the current monitoring period is 16.52% lower than the estimated emission reductions ^{2/} . Thus, no increase in GS VERs. The reason for lower emission reductions is because of low generation. The generation of electricity is heavily dependent on the wind flow, which is affected by natural phenomena beyond the control of the project participant.

Further, during interview with onsite personnel and local stakeholders, VVB team observed there is no hazardous oil or substance released or used by project activity. Moreover, as the project activity refers to wind power plant. There are no pollutions causing technology installed

at the project site. Also, no flora and fauna including birds harmed during operation of project activity.

Verification team checked the CDM registry and confirms that project is not registered under CDM. Verification team also checked that the projects are not registered under the REC mechanism of India and the same can be cross-checked at https://www.recregistryindia.nic.in/index.php/publics/registered_regens. Also, International REC (I-REC) registry (<https://evident.services/device-register>) is cross-checked and found that this project is not under I-REC as well. Thus, double counting for the current monitoring period is ruled out.

Moreover, PP has submitted declaration for no double counting dated 23/11/2023. PP also confirms that PA is not registered under VCS (VERRA). Verification team checked the VERRA registry web site <https://registry.verra.org/app/search/VCS> and confirms that PA is not registered under VERRA.

Grievance Mechanism:

During the interviews with PP, the verification team confirmed that there is a grievance register^{13/} with contact details at the project site office and are accessible to local stakeholders. Verification team has checked the grievance registered during the physical site visit and found that there are no grievances registered by the local stakeholders during the current monitoring period. Also, it was observed that there is no legal Contest arise on project activity during monitoring period.

Materiality adopted in Verification:

Consideration of materiality in planning the verification

No.	Risk that would lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk levels	Justification	
1	Human errors: Readings from Meters (if not automatic)	LOW	Human error is likely to occur if the monitoring personnel are not trained well or inexperienced in data recording procedures and monitoring process	All the personal are well trained to monitor and collect data and thus risk associated with Human error is minimized. Assessment team checked the training records to confirm that all the personal are well trained to handle the activities related to monitoring. Assessment team checked the training records for the complete monitoring period and

				confirm that the personal are well trained to monitor and collect data for the project activity.
2	Human error: Quantification of emission reduction	LOW	Use of spread sheets without adequate data control, changes/updates, version tracking, traceability and security	All the energy statement i.e. JMR sheets and the invoices for the complete monitoring period are checked and thus the assessment team confirms that the ER value is conservative and correct.

Consideration of materiality in conducting the verification

In line with Guidelines for Application of materiality version 02.0^{/4/} in verifications, the verification team has conducted a complete verification of all the information presented in the monitoring report and data monitored as presented in the emission reduction calculation spread sheet. It invoices follows the paper trail back to the raw data such as meter reading records and invoices.

Emission Reductions (tCO ₂ e)/year	500,000 or more	300,000 to 500,000	300,000 or less	Micro Scale projects
Materiality Threshold para (9.6.3) of Validation-and-Verification-Standard version 1.0	0.5%	1.0%	2.0%	10.0%

The applicable materiality threshold is 0.5% for project activity as achieved ERs were more than 500,000 tCO₂e/year as per requirement of V1.0_PAR_Validation-and-Verification-Standard.

Particulars / Monitoring Report	MR Version (Initial)	MR Version (Revised/Final)
Emission Reductions Achieved (tCO ₂ e) in this monitoring period	512,411 tCO ₂ e	512,411 tCO ₂ e
Applicable Threshold (%) as per para 9.6.3 of Validation-and-Verification-Standard version 1.0 ^{/5/}	0.5%	0.5%

The verification team has identified the impact of errors observed and those were corrected by PP during verification for all monitoring parameters at the individual level. There are no material errors, overestimation of ER, omission, or misstatement.

In summary, verification team confirms that actual emission reductions are lower than the estimates as per GS4GG PDD^{/1/} for the current monitoring period.

Verification team considers the project and monitoring description of the project contained in the Monitoring report to be complete and accurate. The Monitoring report complies with the relevant methodology, tools, forms and guidance which are in line with that available in the registered documents (including GS4GG PDD) with Gold Standard.

Opinion:

- a) In opinion of the verification team, the implementation and operation of the project activity is in compliance with the description in the GS4GG PDD version 05.
- b) There is no revision in monitoring plan or post registration change for the current monitoring period.
- c) The actual emission reductions for the current monitoring period are 512,411 tCO₂e which are less than the estimated ERs (613,844 tCO₂e) for the comparable period.

3.3 Compliance of the Monitoring Plan with the Monitoring Methodology

The verification team is able to confirm that the monitoring plan and the monitoring system implemented are in compliance to the applied monitoring methodology ACM0002, version 18.1. All other requirements of the applied methodology are met.

During the verification all relevant monitoring parameters (as listed in the GS4GG PDD^{/1/}) have been verified with regard to the appropriateness of the applied measurement/determination method, the correctness of the values applied for ER calculation, the accuracy, and applied QA/QC measures.

Opinion:

The monitoring plan mentioned in the GS PDD^{/1/} is in line with the applied methodology i.e. ACM0002, Version 18.1. The monitoring mechanism is in line with the methodology and is effective and reliable.

3.4 Completeness of Monitoring

The monitoring has been carried out in accordance with the monitoring plan contained in the PDD^{/1/}. During the course of verification, all relevant monitoring parameters have been verified with regard to the appropriateness of the applied measurement / determination method and applied QA/QC procedures. It is confirmed that the monitoring parameters have been measured / determined without material misstatements.

The verification team reviewed the actual monitoring during the site visit and from document review and compared it against the requirements of the monitoring plan in the GS4GG PDD^{/1/} and found in line.

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

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

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

The ex-ante values for $EF_{grid,OM,y}$, $EF_{grid,BM,y}$, & $EF_{grid,CM,y}$ were considered for calculation of emission reductions are consistent with the registered GS4GGPDD^{/1/}.

The value of combined margin in India is estimated using CO₂ Baseline Database for Indian Power Sector" version 12.0, published by the CEA (Central Electricity Authority, Govt of India) and thus verification team concludes that the value is correct and appropriate. The default values in turn are used for baseline calculation as per the formula given in the registered GS4GG PDD^{/1/} for the current monitoring period. Verification team checked the values, source of data, choice of data, purpose of the data mentioned in the MR from the registered GS4GG PDD^{/1/} and confirms that the similar approach was considered for the current monitoring period also.

The relevant Emission factor values used for emission reduction calculation are given below. Also, as GS4GG "Principles and Requirements" version 1.2^{/7/}, ex-ante fixed parameters are now connected to relevant SDG indicator which is acceptable to the assessment team.

$EF_{grid,OM,y}$ - Relevant SDG Indicator= SDG13: Climate Action= 0.9843 tCO₂e/MWh ^{/1/}

$EF_{grid,BM,y}$ - Relevant SDG Indicator= SDG13: Climate Action= 0.9083 tCO₂e/MWh ^{/1/}

$EF_{grid,CM,y}$ - Relevant SDG Indicator= SDG13: Climate Action= 0.9652 tCO₂e/MWh ^{/1/}

Project proponent has applied corrections in ex-ante data/parameter in this monitoring period which was typo error in registered PDD. In Registered PDD, the data/parameters were indicated as $EF_{OM,y}$, $EF_{BM,y}$, & $EF_{CM,y}$. The same is corrected as $EF_{grid,OM,y}$, $EF_{grid,BM,y}$, & $EF_{grid,CM,y}$ in Section B.2.2 of MR. The corrected ex-ante data/parameters are in line with the applied Tool 07: Tool to calculate the emission factor for an electricity system, version 7.0, thus acceptable to VVB.

b. Data and parameters monitored

Relevant SDG Indicator	7.2.1 Affordable and Clean Energy
Data/parameter:	$EG_{PJ,y}$
Unit	MWh
Description	Quantity of net electricity supplied to the grid in year y
Measured/calculated/default	The parameter $EG_{PJ,y}$ is calculated based on monitored value of export and import by tri-vector energy meter at the PGCIL,400/230kV control room, Thootukudi(Tuticorin) of accuracy class 0.2s.

	Power is being evacuated through 230KV transmission line is connected to PGCIL Tirunelveli GIS PS (230/400 kV) at District Thootukudi (Tuticorin). Connectivity and LTA Permission have been received from PGCIL in the name of the Company for 200 MW capacity Electricity exported /imported to the grid is in kWh. However, for the calculation purpose electricity exported is converted in MWh. The Net electricity supplied to the grid by the project activity is exported is converted in MWh. The net electricity supplied to the grid by the project activity is calculated as a difference of electricity Exported to the grid and electricity imported from the Grid obtained from monthly meter reports from SECI provided as per below equation: $EG_{PJy} = EG_{Export} - EG_{Import}$ Cross Checking: Quantity of net electricity supplied to the grid will be cross checked from the Invoices/ Monthly Bill raised by the Project Participant to SECI						
Source of data	Generation statement provided by SECI every month.						
Value(s) of monitored parameter	530,885.97 MWh <table border="1"> <tr> <td>Vintage wise Breakup</td><td>Net export (MWh)</td></tr> <tr> <td>01/01/2022 to 31/12/2022</td><td>530,885.97</td></tr> <tr> <td>Total</td><td>530,885.97</td></tr> </table>	Vintage wise Breakup	Net export (MWh)	01/01/2022 to 31/12/2022	530,885.97	Total	530,885.97
Vintage wise Breakup	Net export (MWh)						
01/01/2022 to 31/12/2022	530,885.97						
Total	530,885.97						
Monitoring equipment	Monitoring equipment: Electrical Energy Meters which are electronic tri-vector meters of accuracy class 0.2s (Main, check and standby meters) (Please refer to the Annex-2 for meter serial number) Data type: Measured & Calculated Archiving: Paper & Electronic Recording Frequency: Daily All the meters were calibrated as per the requirement, the details of calibration have been provided in Appendix 2 of the report. The calibration dates are verified with the calibration certificates and found that calibration dates are consistent with the dates mentioned in calibration certificates.						
Measuring/reading/recording frequency:	Continuous measurement and at least monthly recording						
Calculation method (if applicable):	The electricity exported / supplied by the project activity is measured through meters having accuracy class of 0.2s. The						

	net export of electricity is calculated as difference of export and import of project activity. Based on the calculation, Report on Generation & Compensation (Meter reading reports)^{17/} are issue by the Tamil Nadu State electricity board. The values from generation statement were further cross checked with the invoices and found consistent. The export and import of electricity reading sourced from the Report on Generation & Compensation/ Monthly Meter reading reports.
QA/QC procedures:	The meters will be calibrated once in every 5 years by an independent testing laboratory and faulty meters will be duly replaced immediately. The meters are of accuracy class 0.2s.
Cross Checks	The value was cross checked with invoices ^{17/} and found consistent.

Relevant SDG Indicator	SDG 8.5.1: Decent Work and Economic Growth
Data/Parameter	- Quantitative employment, - Income generation
Unit	- Number (employees) - INR (salary)
Description	- Number of people employed directly due to the project activity with Number of male/female, permanent/temporary, age and person with disabilities. - Salary given to the employees of the project. The income to all the unskilled workers is made on day-to-day basis in line with the minimum wage requirements. Annual records of income paid to all the employees are available.
Measured/calculated/default	Measured: - Employee Records - Salary Record of the employees
Source of data	- Salary of the project employees^{10/} - Plant Employee Records VVB has checked salary slip/payment for O & M services during the physical site visit and also interview with employees and local stakeholders to confirm.

Value(s) of monitored parameter	Total 77 persons employed during this monitoring period, Permanent employees- 74; Temporary employees- 3; Males: 77; Females: 00;		
	The income generation during the current monitoring period is 104,849,000 INR.		
	VVB has verified the same with salary payment to employees and cross check with attendance sheet. Vintage wise provided are as follows:		
	Monitoring Period	Employment	Income (INR)
	01/01/2022 to 31/12/2022	77	104,849,000
	Out of 77 employments, 74 number of jobs are permanent and full-time in nature and 3 numbers are based on temporary. There are no female employee found.		
Monitoring equipment	Not applicable		
Measuring/reading/recording frequency:	Annually		
Calculation method (if applicable):	The salary payment has been checked with salary slips and payments towards O & M services.		
QA/QC procedures	The number of persons employed would be mentioned in the plant register, which can be crossed checked with daily attendance register and salary slips		
Cross checked	The data's have been cross checked with attendance registered and found consistent.		

Relevant SDG Indicator	SDG 8.5.1: Decent Work and Economic Growth
Data/Parameter	Quality of employment
Unit	Number (Trainings)
Description	Number of Trainings provided to employees & O&M staff
Measured/calculated/default	Training Records
Source of data	Training records ^{10/} (HSE & HR) and employee feedback forms. VVB has checked training records and attendance sheet during the physical site visit and also interview with employees to confirm the same.

Value(s) of monitored parameter

Total 21 training has been given to the employees during current monitoring period. VVB has verified the same with training records and attendance sheet^{9/}. The details of provided trainings are included in Section D.2 of the monitoring report. Vintage wise provided trainings are as follows:

Vintage	No of Trainings
01/08/2021-31/12/2021	21
Total	21

Details of conducted trainings and number of participants in each training are as follows: -

S. No.	Date	Topics	Total No. of Trainings in the month	Total no. of attendees
1	23/05/2022	Heat stress and fire fighting	1	4
2	23/05/2022	EHS Engagement Program (EHS Manual, H&S Plan, PTW, LOTOTO, Element Ownership)	1	4
3	18/06/2022	LOTOTO	1	19
4	18/06/2022	WTG Gear Box system	1	4
5	24-Jun-22	Training on confined space	1	3
6	16-Jul-22	GIMS	1	2
7	23-Jul-22	PTR OLTC Operation & function	1	1
8	30-Jul-22	Electrical Safety, Energy Isolation/LOTO/ awareness on incident management	1	4
9	30-Jul-22	Procedure for power transformer maintenance	1	2
10	6-Aug-22	Importance of 33kV line maintenance	1	2
11	19-Aug-22	External training on defensive Driving	1	8
12	19-Aug-22	External training on defensive Driving	1	8
13	27-Aug-22	Working at Height (Scaffolding safety / Ladder safety)	1	3
14	27-Aug-22	Awareness on Confined Space	1	3
15	17-Sep-22	Awareness knowledge on EHS plan and emergency response	1	2

		plan		
16	17-Sep-22	Introduction to SAPPM Module	1	2
17	17-Sep-22	Portable Electrical Hand Tools / Machine Guarding	1	4
18	17-Sep-22	Personnel Protective Equipment's	1	4
19	15-Oct-22	Training on GIMS policy	1	4
20	15-Oct-22	Contractor Safety Management (CSM)	1	3
21	18-Oct-22	Safety alert (awareness training on ladder climb)	1	5
Total			21	91
Monitoring equipment	Not applicable			
Measuring/reading/recording frequency:	Annually			
Calculation method (if applicable):	No of trainings provided is checked with training records attendance sheet.			
QA/QC procedures	The number of persons employed would be mentioned in the plant register, which can be crossed checked with daily attendance register.			
Cross checked	The data's have been cross checked with attendance registered and found consistent.			

Relevant SDG Indicator	SDG 13: Climate Action	
Data/Parameter	Air quality	
Unit	tCO ₂ e	
Description	Reduction in CO2 emission reduction due to implementation of project activity	
Measured/calculated/default	Calculated	
Source of data	Calculated as per “Tool to calculate the emission factor for an electricity system, version 7.0”. The data are obtained from “CO ₂ Baseline Database for Indian Power Sector” version 12.0, published by the Central Electricity Authority, Ministry of Power, Government of India.	
Value(s) of monitored parameter	512,411 tCO ₂ e	
	Vintage wise Breakup	SDG 13 (in tCO ₂ e)
	01/01/2022 to 31/12/2022	512,411
	Total	512,411

Monitoring equipment	Not Applicable
Measuring/reading/recording frequency:	Monthly calculation and annual compilation
Calculation method (if applicable):	This calculated using formula as per registered PDD ($BE_y = EG_{PJ,y} * EF_{grid,CM,y}$ Where $EG_{PJ,y} = EG_{facility,y}$
QA/QC procedures	A check meter is also installed near to the export meter to cross check the electricity exported to the grid. The check meter reading would also be used in case of failure of export meter
Cross check	Not Applicable

The verification team confirms;

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

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

c. Implementation of sampling plan

PP did not apply sampling plan to determine data and parameters monitored during this monitoring period. The verification team has checked all the documents such as credit notes issued by State electricity board and Invoices and hence sampling plan was not required. The verification team hereby confirms that has checked all the documents.

d. Compliance with the calibration frequency requirements for measuring instruments

The calibration details such as make, accuracy class serial number is as per the meters available onsite and checked during verification site visit. The Calibration details are presented in Appendix 2 of this report. Calibration of meters carried out by Yadav Measurements Private Limited a NABL accredited company for testing and calibration, Govt of India (<http://www.nabl-india.org/>) to carry out calibration.

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

3.5 SDG Outcomes Monitoring

For Contributions to Sustainable Development

The verification team checked the sustainable development indicator parameters during the site visit interviews.

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

As per the sustainability monitoring plan in the GS4GG PDD^{1/}, verification team evaluated all sustainable development indicators as followed in the table:

Item	Baseline estimate	Project estimate	Net benefit
SDG 7: Affordable and Clean Energy	Net electricity export to grid = 0 MWh	Net electricity exported to grid = 530,885.97 MWh	Net electricity exported to grid = 530,885.97 MWh
SDG 8: Decent Work and Economic Growth			
Trainings provided to O&M staff (Nos)	0	21	21
No. of Employment opportunities created (Nos)	0	77	77
Income generation	0	The income generation during the current monitoring period is 104,849,000 INR.	The income generation during the current monitoring period is 104,849,000 INR.
SDG 13: Climate Action	512,411 tCO ₂ e	-	512,411 tCO ₂ e

Comparison of actual value of outcomes with estimates in approved GS PDD^{1/}

Item	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period
SDG 7: Affordable and Clean Energy	635,976 MWh	530,885.97 MWh
SDG 8: Decent Work and Economic Growth	No. of trainings given: 01 Employment: 15	No. of trainings given: 21 Jobs created: 77 The income generation during the current monitoring period is 104,849,000 INR.
SDG 13: Climate Action	613,844 tCO ₂ e tCO ₂ e	512,411 tCO ₂ e

SDG Impact Tool Assessment

Verification team has checked the SDG Impact tool/19/ and found that PP has correctly mentioned all the above SDGs and its calculation details. The same are found consistent in Monitoring Report.

The adequacy and compliance of the monitoring plan in the Monitoring report was found as per the requirements laid by the GS4GG PDD^{1/}. The information flow (from data generation, aggregation, to recording, calculation and reporting) is already included under respective parameter above. The verification team has verified all the data and collected evidence as per the required monitoring frequency and found to be correct and appropriate meeting the requirements of the applied methodology and registered GS4GG PDD^{1/}.

As a part of continuous feedback from stakeholders, the grievances register is being placed at site and is being continuously monitored and addressed through the grievances cell on regular basis and maintained in a grievance register^{13/} at site office. The grievance register provided to verification team was also checked, it was found that during the current monitoring period, no comments/feedbacks were received from the local stakeholders.

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

3.6 Assessment of Data and Calculation of Greenhouse Gas Emission Reductions

As a result of verification of the ER calculation process, the assessment team confirmed that all the parameters required for the determination of the emission reductions have been included in the Monitoring report Version 04 and corresponding ER calculation spreadsheet and are consistent with the applied methodology ACM0002, Version 18.1^{4/} and the monitoring plan

contained in the registered GS4GG PDD^{/1/}. The parameters are complete in this monitoring period.

After verifying the reported figures with the raw data sources, it is confirmed that the values of the parameters from the raw data sources are consistent with those quoted in the Monitoring Report Version 04 and corresponding ER calculation spreadsheets. The verification process for the same has been clearly described in above section of the report. See below for the detailed data:

The current monitoring period covered the period from 01/01/2022 to 31/12/2022. The baseline emission is calculated as:

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

Where,

BE_y is the baseline emissions in year y (tCO₂e)

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

$EF_{grid,CM,y}$ Combined margin CO₂ emission factor for grid connected power generation in year y calculated using "Tool to calculate the emission factor for an electricity system"^{/4/}.

The project activity is the installation of windmills and it is a green field project. So the formula in option (a) i.e., greenfield plants is used to the value of $EG_{PJ,y}$. In accordance with para 46 of the applied methodology:

$$EG_{PJ,y} = EG_{facility,y}$$

Where;

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

The vintage wise baseline emission is calculated as follows:

Baseline emission for the period from 01/01/2022 to 31/12/2022

$$BE_y = 530,885.97 \text{ MWh} \times 0.9652 \text{ tCO}_2\text{e}$$

$$BE_y = 512,411 \text{ tCO}_2\text{e} \text{ (Rounded Down)}$$

Vintage wise breakup of baseline emissions"

Vintage wise breakup	Baseline emissions tCO ₂ e
01/01/2022 to 31/12/2022	512,411

Thus, the total baseline emission for the current monitoring period (01/01/2022 to 31/12/2022) is 512,411 tCO₂e

Project emissions:

As per para 34 of methodology ACM0002, version 18.1:

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

Where:

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

$PE_{FF,y}$ = Project emissions from fossil fuel consumption in year y (t CO₂e/yr)

$PE_{GP, y}$ = 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 Wind 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 $PE_{FF, y}$, $PE_{GP, y}$, $PE_{HP, y}$ are equal to zero.

thus,

$PE_y = 0$ tCO₂e.

Leakage emissions:

As per applied methodology, leakage emissions are not applicable.

Emission reductions for the complete monitoring period (01/01/2022 to 31/12/2022):

$$\begin{aligned} ER_y &= BE_y - PE_y \\ &= 512,411 \text{ tCO}_2\text{e} - 0 \text{ tCO}_2\text{e} \\ &= 512,411 \text{ tCO}_2\text{e} \end{aligned}$$

Thus, the total emission reductions achieved during the current monitoring period is 512,411 tCO₂e. Verification team has checked the emission reductions calculation spread sheet^{/2/} and found consistent.

3.7 Management and Operational System

The responsibilities of data measurement, collection, verifying, archiving etc. have been clearly defined in the approved GS4GG PDD^{/1/}. The same practice is followed onsite and it is confirmed by the assessment team during the site visit. The data related to ER calculation as well as data monitoring, collection process etc. have been internally reviewed by the management of the Monitoring team regularly. The responsibility of each function is consistent with the monitoring plan in the registered GS4GG PDD^{/1/}.

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

It's verified during the site visit, the monitoring procedure as well as the internal quality management and control procedures are stipulated in the GS4GG PDD^{/1/}. The monitoring personnel have been interviewed by the assessment team and it's confirmed that the monitoring is implemented as per the procedure. Also, the training records (training register and attendance sheet)^{/8/} has been checked by the assessment team and it is confirmed that the monitoring personnel are sufficient train to perform the monitoring.

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

4. REFERENCE

LIST OF DOCUMENTS	
S. No.	Document/Evidence/Reference/Web link, Version, Date
1.	GS4GG PDD version 05 dated 30/12/2019
2.	GS Monitoring report version 01 dated 08/06/2023(Initial) GS Monitoring report version 04 dated 30/08/2024 (Final) ER Sheet version 01 dated 08/06/2023 (Initial) ER Sheet version 03 dated 29/01/2024 (Final)
3.	Commissioning certificates of project activity
4.	Applied methodology: ACM0002 "Grid-connected electricity generation from renewable sources" (Version 18.1) Tool to calculate the emission factor for an electricity system Version 07.0 Tool for the demonstration and assessment of additionality -Version 07.0.0 CDM VVS for the project activities, version 03.0 Guidelines for application of materiality, version 02.0
5.	Actual geo-coordinates of project activity
6.	Log book records /Breakdown details
7.	GS4GG "Principles and Requirement" version 1.2 GS4GG Activity Requirements: RE Activity Requirements version 1.4 GHG Emissions Reduction & Sequestration Product Requirements, Version 2.2
8.	Calibration certificates of all energy meters
9.	Training record/Attendance sheets
10.	Employment records, Salary slips
11.	EHS Policy / QA and QC policies
12.	HR records
13.	Grievance Register
14.	Technical Specifications of WTGs
15.	Power Purchase Agreement (200 MW) dated 15/12/2017 Operation and Maintenance agreement with Siemens Gamesa Renewable Power Private Limited dated 16/01/2018
16.	Annual Reports version 2.0 dated 06/12/2022
17.	Copies of monthly Generation (JMRs) and invoices
18.	Transition Records/Annual Report
19.	Audit Technique SDG Impact Tool
20.	Declaration for no double counting of <u>credits</u> dated 23/11/2023
21.	GS performance review for the MP: 01/01/2021 to 31/12/2021
22.	Verification report of previous monitoring period version 2.0, dated 25/06/2022

5. FINAL VERIFICATION STATEMENT

Applus+ Certification has been engaged by Infinite Environmental Solutions LLP and Orange Sironj Wind Power Pvt Ltd to perform the verification of the “200 MW Wind Power Project in Tamil Nadu by Orange Sironj”.

The management of Orange Sironj Wind Power Pvt Ltd is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project’s Monitoring Plan in the registered GS PDD version 05 and the applied methodology ACM0002, version 18.1.

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

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

In our opinion, the GHG emission reductions for “200 MW Wind Power Project in Tamil Nadu by Orange Sironj” for the monitoring period 01/01/2022 to 31/12/2022 (Both days included) as reported in Monitoring Report, prepared on the basis of the project’s Monitoring Plan are fairly stated.

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

Reporting period: 01/01/2022 to 31/12/2022 (Both days included)

Verified emissions in the above reporting period:

Leakage emissions	0 tCO ₂ e equivalents
Project emissions	0 tCO ₂ e equivalents
Baseline emissions	512,411 tCO ₂ e equivalents
Emission reductions	512,411 tCO ₂ e equivalents

Vintage wise breakup of GS VERs

Vintage wise breakup	GS VERs (tCO ₂ e)
01/01/2022 to 31/12/2022	512,411

Date: 11/09/2024

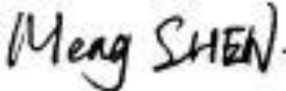
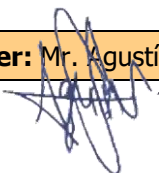
Lead Auditor: Mr. Jitendra Mohan Singh

Tech. Expert: Mr. Jitendra Mohan Singh

Tech. Reviewer: Mr. Simon Shen

Approver (*Applus+ Certification VVB Technical Manager*)

Mr. Agustín Calle de Miguel

ASSESSMENT TEAM	
Lead Auditor: Mr. Jitendra Mohan Singh	Technical Reviewer: Mr. Simon Shen
Signature: 	Signature: 
Approver: Mr. Agustín Calle de Miguel	
Signature: 	

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

FAR from Performance review

Type:	☐ CAR ☐ CL/CR ☒ FAR	Number:	01
Raised by:	GS	Ref. to checklist in above tables:	3.2
Description of the audit finding		Date:	03/11/2023
GS has raised one FAR during the performance review i.e. "VVB shall resume onsite in the next verification".			
Project Participant's response		Date:	18/12/2023
The physical site visit was conducted on 31/10/2023 and 01/11/2023 during the current monitoring period (01/01/2022 to 31/12/2022)			
Documentation provided as evidence by Project Participant			
Auditor's assessment comment		Date:	11/01/2024
Justification provided by project proponent has been found acceptable which is further checked & found consistent with site visit documents i.e. Audit plan, Onsite visit Attendance sheet & photographs.			
Hence FAR is Closed.			

CLs from this verification

Type:	☐ CAR ☒ CL/CR ☐ FAR	Number:	01
Raised by:	Jitendra Mohan Singh	Ref. to checklist in above tables:	3.2
Description of the audit finding		Date:	03/11/2023
During the desk review it was found that on cover page of MR the name of project representative is not in line with the registered GS PDD, version 04 dated 07/08/2019. PP is requested to clarify.			
Project Participant's response		Date:	18/12/2023
On the cover page of revised MR version 2.0 the name of project representative has been made in line with the registered GS PDD version 05 dated on 30/12/2019.			
Documentation provided as evidence by Project Participant			
GS PDD version 05 Revised MR version 2.0			
Auditor's assessment comment		Date:	11/01/2024
Name of referred project representatives has now been revised, which is checked and verified by the GS verifier & found consistent with registered GS PDD, version 05.			
Hence, CL is Closed.			

Type:	☐ CAR ☒ CL/CR ☐ FAR	Number:	02
Raised by:	Jitendra Mohan Singh	Ref. to checklist in above tables:	3.2
Description of the audit finding		Date:	03/11/2023

During desk review of submitted supporting evidences, VVB found that PP has not submitted the following supporting evidences:

1. *Commissioning Certificates of the WTGs*
2. *O & M agreement signed with the O & M services provider*
3. *Power Purchase agreement*
4. *Single Line diagram showing all equipment's and metering points*
5. *Supporting of the SDG 8*
6. *Declaration by PP for no double counting*

PP shall clarify the same.

Project Participant's response	Date:	18/12/2023
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The following supporting documents has been provided.

1. *Commissioning Certificates of the WTGs*
2. *O & M agreement signed with the O & M services provider*
3. *Power Purchase agreement*
4. *Single Line diagram showing all equipment's and metering points*
5. *Supporting of the SDG 8*
6. *Declaration by PP for no double counting*

Documentation provided as evidence by Project Participant

Commissioning Certificates of the WTGs
 O & M agreement signed with the O & M services provider
 Power Purchase agreement
 Single Line diagram showing all equipment's and metering points
 Supporting of the SDG 8
 Declaration by PP for no double counting

Auditor's assessment comment	Date:	11/01/2024
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- *Commissioning certificate issued by SECI (Solar Energy Corporation of India) by dated 05/03/2019 (100 MW) and 13/03/2019 (another 100 MW) has been submitted by PP which is checked and verified by GS PDD, V4.0 & hence found acceptable*
- *Signed O & M agreement (between PP & Siemens Gamesa Renewable Power Private Limited) by dated 16/01/2018 has now been submitted which is further checked and verified by the GS VVB & found acceptable.*
- *Signed Power Purchase Agreement (between PP & Solar Energy Corporation of India Limited) by dated 19/12/2017 has now been submitted which is further checked and verified by the GS VVB & found acceptable.*
- *Single Line Diagram incorporating monitoring equipment & feeder details has now been submitted, checked by GS Verifier & found acceptable.*
- *Supporting documents of SDG 8, like attendance sheet, Salary slip has now been submitted. However, project activity claiming 77 employments including women's employment as per information mentioned under updated Monitoring Report. Thus, PP shall further submit supportive evidences accordingly. **Observation is OPEN***
- *Declaration for 'No Double Counting', by dt. 23/11/2023 has now been submitted by project proponent, which is checked and found acceptable by GS verifier.*

Hence, CL remains OPEN.

Project Participant's response	Date:	29/01/2024
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- *The project owner adheres with no discrimination policy. But due to the remoteness of site females do not prefer to work here and out of 77 employees no females are employed at the site until now and in the current monitoring period and the same is mentioned under the monitoring report and the supporting for the same has been provided.*

Documentation provided as evidence by Project Participant		
Auditor's assessment comment	Date:	06/02/2024
PP has submitted evidence (attendance) to confirm the claimed number of employments generated due to the project activity. Which is found appropriate and relevant to the project activity. Hence, CL is closed.		

Type:	☐ CAR ☒ CL/CR ☐ FAR	Number:	03
Raised by:	Jitendra Mohan Singh	Ref. to checklist in above tables:	3.2
Description of the audit finding		Date:	03/11/2023
During the desk review of submitted MR, it was found that in section A.4 PP has mentioned that start date of the crediting period is 07/03/2019. However, as per registered PDD version 04 dated 07/08/2019 start date of the crediting period is 05/03/2019. Further, on the project portal "GSF Registry (goldstandard.org)" crediting period is 03 July, 2019 to 02 July, 2024. PP is requested to clarify.			
Project Participant's response			18/12/2023
It is the Commercial operation date as per SECI and the supporting for the same provided.			
Documentation provided as evidence by Project Participant			
Commissioning certificate			
Revised MR version 2.0			
Auditor's assessment comment		Date:	11/12/2023
Start Date of the crediting period has been mentioned as 07/03/2019 (start date of commercial operation), which is verified from the commissioning certificate issued by SECI by dated 06/03/2019 and also found consistent previous registered documents as well. Thus, found acceptable to GS verifier.			
Hence, CL is closed.			

Type:	☐ CAR	☒ CL/CR	☐ FAR	Number:	04
Raised by:	Jitendra Mohan Singh			Ref. to checklist in above tables:	3.6
Description of the audit finding				Date:	03/11/2023
In Section E.6 of MR, mentioned that “the difference is due to the variation in the Solar radiation’s availability during the current monitoring period, which is a natural uncontrolled phenomenon and may vary”. However, the project is wing power. Please clarify.					
Project Participant’s response				Date:	18/12/2023
The net electricity generated in April and November is low due to the changing season which is beyond the control of the project participant. Moreover, the difference is due to the variation in the wind availability during the current monitoring period, which is a natural uncontrolled phenomenon and may vary and the same has been revised in the revised MR version 2.0					
Documentation provided as evidence by Project Participant					
Revised MR version 2.0					
Auditor’s assessment comment				Date:	11/01/2024

Information pertaining to wind energy has now been incorporated under section E.6, which is checked and verified by the GS verifier and justification given by the project proponent found acceptable.

Hence, CL is Closed.

CARs from this verification

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	01
Raised by:	Jitendra Mohan Singh	Ref. to checklist in above tables:	3.2
Description of the audit finding	Date: 03/11/2023		
<i>In section A.1 of the monitoring report "General description of project", contribution to Sustainable Development" and information of SDGs are not indicated.</i> <i>Further, approved Grievance mechanism (CIGM) is not provided in Section G.1 of MR Corrective action sought.</i>			
Project Participant's response	Date: 18/12/2023		
<i>In section A.1 of the revised MR 2.0 report "General description of project", contribution to Sustainable Development" and information of SDGs are indicated.</i> <i>Further also Grievance mechanism has been provided in section G.1 of the revised MR version 2.0</i>			
Documentation provided as evidence by Project Participant			
Revised MR version 2.0			
Auditor's assessment comment	Date: 11/01/2024		
Information pertaining to 'Contribution to Sustainable Development', & Grievance Mechanism has now been incorporated under section A.1 & G.1 of the monitoring report, that is checked and verified by the GS verifier and found consistent with the GS MR Template Filling Requirement, Version 1.1. Hence, CAR is Closed.			

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	02
Raised by:	Jitendra Mohan Singh	Ref. to checklist in above tables:	3.4
Description of the audit finding	Date: 03/11/2023		
<i>The following are the observations of VVB during the review of MR regarding monitoring parameter:</i> For SDG indicator 7: Source of monitored data is inconsistent with registered PDD version 04 dated 07/08/2019. For SDG indicator 8: <i>The monitored parameters of SDGs are not described in line with the registered GS PDD (refer page 27/28 of PDD, version 04).</i> <i>Monitoring frequency found inconsistent with registered PDD version 04 dated 07/08/2019.</i> <i>Supporting documents such as training record (HSE & HR), Salary slip, HR records, plant register and daily attendance register/ training attendance sheet for cross check.</i>			

- PP has reported in Section D.2 under “Relevant SDG Indicator SDG 8.5.1: Decent Work and Economic Growth” that the O&M cost spend is 25,080,000 INR. However, trailing record of calculation of the O & M cost is not mentioned in MR and ER sheet and supporting not submitted also. For SDG indicator 13: - Data/parameter monitored under “Relevant SDG Indicator 13.2.1: Climate Action” is not consistent with the registered GS PDD. - Source of monitored data is inconsistent with registered PDD version 04 dated 07/08/2019.		
Project Participant's response		18/12/2023
The following corrections has been made in monitoring section of the revised MR version 2.0 as per follows: For SDG indicator 7: The source of monitored data has been made consistent with registered PDD version 05 dated 30/12/2019. For SDG indicator 8: - The monitored parameters of SDGs are not described in line with the registered GS PDD version 5.0 dated on 30/12/2019 - Monitoring frequency made consistent with registered PDD version 05 dated on 30/12/2019 - Supporting documents such as training record (HSE & HR), Salary slip, HR records, plant register and daily attendance register/ training attendance sheet for cross check has been provided. - In Section D.2 under “Relevant SDG Indicator SDG 8.5.1: Decent Work and Economic Growth” that the income generation has been mentioned in MR and ER sheet and supporting for the same submitted. For SDG indicator 13: - Data/parameter monitored under “Relevant SDG Indicator 13.2.1: Climate Action” has been made consistent with the registered GS PDD version 5.0 dated on 30/12/2019. - Source of monitored data has been made consistent with registered PDD version 05 dated 30/12/2019.		
Documentation provided as evidence by Project Participant		
GS PDD version 05 Revised MR version 2.0 Revised ER sheet version 2.0		
Auditor's assessment comment		Date: 11/01/2024
For SDG 7 - The source of monitored data has now been revised in updated monitoring report, which is checked and found consistent with registered PDD version 05 dated 30/12/2019. For SDG 8 - Description information of claimed SDGs has now been made consistent with GS registered PDD, version 5.0. Further, checked and found acceptable to GS Verifier.		

- Frequency of monitored parameters has now been revised and made consistent with registered GS PDD, Version 05. Further, checked and found acceptable to GS Verifier.
- Cross check supporting documents such as training records, Salary slip, daily attendance register/ training attendance etc has now been submitted.
- Amount of income paid to operation and maintenance employees (during current monitoring period) has now been mentioned, which is checked with submitted declaration by project proponent, dt 23/11/2023 and found acceptable.

For SDG 13

- Nomenclature for “Data/Parameter”, has now been made consistent with GS registered PDD, Version 5.0. Checked and verified by the GS Verifier and found acceptable.
- The source of monitored data has now been revised in updated monitoring report, which is checked and found consistent with registered PDD version 05 dated 30/12/2019.

Hence, CAR is Closed.

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	03
Raised by:	Jitendra Mohan Singh	Ref. to checklist in above tables:	3.6
Description of the audit finding		Date:	03/11/2023
<i>The following are the observations of VVB during the review of emission reduction sheet:</i> <i>1. Title of the project activity and version number is not indicated in ER sheet.</i> <i>2. In SDG 8 tab “parameter monitored is Cost spent for O&M. However, parameter monitored in MR is income generated.</i> <i>3. Baseline emission is not calculated under Tab “SDG 13” of ER sheet.</i> <i>Corrective action is requested</i>			
Project Participant's response			18/12/2023
<i>The following changes are made in the revised ER sheet version 2.0</i> <i>1. The Title of the project activity and version number has been indicated in revised ER sheet version 2.0</i> <i>2. It has been revised in the ER sheet and made in line with the registered PDD version 05.</i> <i>3. It has been included in Tab “SDG 13” of the revised ER sheet version 2.0</i>			
Documentation provided as evidence by Project Participant			
Revised ER sheet version 2.0			
Auditor's assessment comment		Date:	11/01/2024
Under the updated Emission Reduction Spreadsheet: • Details associated with title of the project, version number, date has now been incorporated under the updated ER spreadsheet. • Nomenclature for SDG 8 has now been revised from “Cost Spent” to “Income generation”, which is checked and verified with submitted declaration for the same. • Column for baseline emission reductions has now been included under the table of tab, “SDG 13”, Further checked and found acceptable to GS Verifier.			
Hence, CAR is Closed.			

Appendix 2: Calibration details of monitoring meters

Details	Main meter	Check meter	Standby meter
Make	Secure	Secure	Secure
Meter number	SA0011A	SA0012A	SA0015A
Location	PGCIL, 400/230kV control room, Tuticorin	PGCIL, 400/230kV control room, Tuticorin	PGCIL, 230/33kV Pooling station, Control room, Thoothukudi
Accuracy	0.2S	0.2S	0.2S
Calibration frequency as per PD	Once in 5 years	Once in 5 years	Once in 5 years
Calibration date	10/04/2021	10/04/2021	11/04/2021
Calibration validity	09/04/2026	09/04/2026	10/04/2026

The calibration dates are verified with the calibration certificates and found that calibration dates are consistent with the dates mentioned in calibration certificates. The calibration frequency of meters is once in 5 years and calibration of meters meet the requirement of calibration frequency.

Appendix 3: Audit Team CVs

Name	SHORT CV VERSION BACKGROUND INFORMATION
Mr. Jitendra Mohan Singh	Mr. Jitendra Mohan Singh , has done Advanced MSc in Sustainable Energy Systems and Management from International Institute of Management, University of Flensburg, Germany and B.Tech. in Agricultural Engineering from Allahabad University, India. He has more than (22) years of working experience in different organizations like IARI, IIT Delhi, ICAR, IRADe, CAPART, SMEC and Perenia Carbon and M B Power (Madhya Pradesh) Ltd. in the area of Agriculture, Energy & Environment and Climate Change. He also worked as a RIT expert (ad hoc) in UNFCCC from 2010 to 2013. Currently, he is associated with True Quality Certifications Private Limited and is empanelled with Applus+ Certification to carry out validation and verification related to GHG reductions projects. Mr. Jitendra Mohan Singh is based in Ghaziabad (Uttar Pradesh), India. Mr. Jitendra Mohan Singh may participate as Lead Auditor and Technical Expert for the assessment.
Mr. Amit Rai	Mr. Amit Rai , has done Bachelor of Technology in Electrical & Electronics Engineering from Dr. A.P.J. Abdul Kalam Technical University, India and Government Certified Competency Class – I, Electrical Supervisor from Government of National Capital Territory of Delhi, India. He has more than (6) years of working experience in different organizations like Sunrator Technologies, Sun Source Energy Private Ltd. (SHV Energy Group, Singapore) & KBS Certification Services Private Ltd. (UNFCCC's – DOE), In the area of Renewable Project Management, Execution, Designing & Climate Change Services. Currently, he is associated with applus+ Certification to carry out validation & Verification activity related to GHG reduction projects as Auditor in Trainee & Technical Expert in Trainee. Mr. Amit Rai is based in South – East Delhi, India.
Mr. Simon Shen	Mr. Simon Shen (Master's Degree in Thermal Energy Engineering, Bachelor's Degree in Environmental Engineering) is an Auditor appointed by Applus+ LGAI for the GHG project assessment, auditing and technical review. He has more than 6 years of work experience in CDM/GS4GG/VCS project assessment and review with Applus+, apart from the years of experience working as GHG Auditor and ISO 9001/14001 in TUV SUD for 3.5 years before he joined Applus+. Mr. Simon Shen has extensive experience also as former Applus+ Shanghai CDM Technical Manager. Mr. Simon Shen is based in Shanghai, China. Mr. Simon Shen participate in the project's technical review team.

Appendix 4: Audit Technique

Scope of assessment	Auditing technique(s) used ^[1]	Has the audit technique(s) been sufficient to validate the aspect? ^[2]	Risk(s) identified ^[3]	Auditing tools used as a part of mitigation of identified risks ^[4]	Findings raised ^[5] (if applicable)	Conclusion	Reference to the key evidence supporting the Conclusion
DESCRIPTION OF PROJECT							
General description of project	Site Visit, Conducting site interviews of project developer representative, Documents shared by PP during site visit To review: - documentation/documentary evidence(s) - database(s)	Yes	Any design change(s)/temporary deviation(s) since the previous physical site visit	Site visit, Conducting site interviews of project developer representative, Review supporting documents for cross-check	FAR 01, CL 01, CAR 01 were raised and successfully closed.	Positive	GS4GG PDD and Monitoring Version 04 Registered and Revised Report

	- plant record(s)						
Location of project	Site Visit	Yes	Any design change(s)/temporary deviation(s) since the previous physical site visit	Orange Charanka Solar Power Private Limited have installed a Large scale solar power based project activity at Patan district of Gujarat state	N/A	Positive	GS4GG Registered PDD, Version 05, Monitoring Report Version 04
Reference of applied methodology	Document Review	Yes	No	Applied methodology is consistent with the approved PDD	N/A	Positive	Transition Request Form
Crediting period of project	Document Review	Yes	Any design change(s)/temporary deviation(s) since the previous	Applied methodology is consistent with the approved	CL 03 was raised and successful	Positive	GS4GG Registered PDD, Version 05, Monitoring Report Version 04 and Commissioning certificate.

			physical site visit	ed PDD	y clos ed.		
IMPLEMENTATION OF PROJECT							
Description of implem ented project	Site Visit, Conducti ng site interview s of project develope r represent ative, Documen ts shared by PD during site visit To review: - documen tation/do cumentar y evidence (s) - database (s) - plant record(s)	Yes	Any design change(s)/tempor ary deviation (s) since the previous physical site visit.	Site visit, Conduc ting site interview s of project develope r represent ative , Review suppor ting docum ents for cross-check	N/A	Posi tive	Revised MR Version 04
Post-Design Certific ation change s	Documen t Review	Yes	Any design change(s)/tempor ary deviation (s) since the previous physical site visit.	Site visit, Conduc ting site interview s of project develope r represent ative , Review suppor ting	N/A	Posi tive	Monitoring Report Version 04

				documents for cross-check			
Description Of Monitoring System Applied by The Project	Site Visit, Conducting site interviews of project developer representative, Documents shared by PD during site visit To review: - documentation/documentary evidence (s) - database (s) - plant record(s)	Yes	Risk of non-conformity with key methodological requirements and monitoring plan.	Site visit, Conducting site interviews of project developer representative, Review supporting documents for cross-check	N/A	Positive	Technical Specifications; Module Ratings; Single Line Diagram;
DATA AND PARAMETERS							
Data And Parameters Fixed Ex Ante Or At Renewal Of Crediting Period	Document Review	Yes	Risk of non-conformity with key methodological requirements (algorithms and/or formulae used to determine	See below for each parameter	N/A	Positive	GS4GG Register PDD

			emission reduction s)				
<i>Parameter 1 EFOM,y</i>	Document Review	Yes	Risk of non-conformity with key methodological requirements (algorithms and/or formulae used to determine emission reduction s)	Document review of all the supporting evidence and comparing with the applied methodology, Registered GS4GG PDD and Previous MRs and Verification reports	N/A	Positive	GS4GG Registered PDD, Previous verification report
<i>Parameter 2 EFBM,y</i>	Document Review	Yes	Risk of non-conformity with key methodological requirements (algorithms and/or formulae used to	Document review of all the supporting evidence and comparing with the applied	N/A	Positive	GS4GG Registered PDD, Previous verification report.

			determine emission reductions)	methodology, Registered GS4GG PDD and Previous MRs and Verification reports			
<i>Parameter 3 EFCM,y</i>	Document Review	Yes	Risk of non-conformity with key methodological requirements (algorithms and/or formulae used to determine emission reductions)	Document review of all the supporting evidence and comparing with the applied methodology, Registered GS4GG PDD and Previous MRs and Verification reports	N/A	Positive	GS4GG Registered PDD, Previous verification report.
Data and parameters monitored	Documents shared by PD during site visit To review: - documentation/documentary evidence	Yes	Risk of non-conformity with key methodological requirements (algorithms and/or formulae	Document review of all the supporting evidence and comparing with the	N/A	Positive	Calibration certificate, GS4GG registered PDD, Previous verification report.

	(s)		used to determine emission reductions)	applied methodology, Registered GS4GG PDD and Previous MRs and Verification reports			
<i>Parameter 1 ERY</i>	Document Review	Yes	Risk of non-conformity with key methodological requirements (algorithms and/or formulae used to determine emission reductions)	Document review of all the supporting evidence and comparing with the Registered GS4GG PDD	N/A	Positive	Emission reduction calculation sheet.
<i>Parameter 42 EGPJ,y</i>	Documents shared by PD during site visit To review: - documentation/documentary evidence (s)	Yes	Conducting site interview with staffs Documents shared by PD during site visit To review: - documentation/documentary evidence (s)	Document review of all the supporting evidence and comparing with the Registered GS4GG PDD	N/A	Positive	Invoice/ JMR

<i>Parameter 5 Number of employment generation</i>	Documents shared by PD during site visit To review: - documentation/documentary evidence (s)	Yes	Conducting site interview with staffs Documents shared by PD during site visit To review: - documentation/documentary evidence (s)	Document review of all the supporting evidence and comparing with the Registered GS4GG PDD	N/A	Positive	Employment records/Salary Slips/Attendance sheet.
<i>Parameter 6 Training Records</i>	Documents shared by PD during site visit To review: - documentation/documentary evidence (s)	Yes	Conducting site interview with staffs Documents shared by PD during site visit To review: - documentation/documentary evidence (s)	Document review of all the supporting evidence and comparing with the Registered GS4GG PDD	N/A	Positive	Registered GS4GG PDD, training records for project activity for employment generation/ VVB interview with employees, local stakeholders etc
Comparison of monitored parameters with last monitoring period	This Section is not applicable as this is renewable project activity.	Yes	This Section is not applicable as this is renewable project activity.	This Section is not applicable as this is renewable project activity.	N/A	This Section is not applicable as this is renewable	This Section is not applicable as this is renewable project activity.

						project activity.	
Implementation of sampling plan	This Section is not applicable as this is renewable project activity.	Yes	This Section is not applicable as this is renewable project activity.	This Section is not applicable as this is renewable project activity.	N/A	This Section is not applicable as this is renewable project activity.	This Section is not applicable as this is renewable project activity.
CALCULATION OF SDG IMPACTS							
Calculation of baseline value or estimation of baseline situation of each SDG Impact	Documents shared by PD during site visit To review: - documentation/documentary evidence (s)	Yes	Risk of non-conformity with key methodological requirements (algorithms and/or formulae used to determine emission reductions), Risk of non-conformity with potential reversal of GHG	Document review of all the supporting evidence and comparing with the applied methodology, Registered GS4GG PDD	CAR 02 was raised and successfully closed.	Positive	PRINCIPLES & REQUIREMENTS version 1.2 section 4.1.8 Revised MR Version 04 ER sheet Version 03 and GS4GG registered PDD.

			benefits and other SDG Impacts				
Calculation of project value or estimation of project situation of each SDG Impact	Documents shared by PD during site visit To review: - documentation/documentary evidence (s)	Yes	Risk of non-conformity with key methodological requirements (algorithms and/or formulae used to determine emission reduction s), Risk of non-conformity with potential reversal of GHG benefits and other SDG Impacts	Document review of all the supporting evidence and comparing with the applied methodology, Registered GS4GG PDD	CAR 03 was raised and successfully closed.	Positive	Revised MR Version 04 and ER calculation sheet.

Calculation of leakage	No leakage identified	Yes	Risk of non-conformity with key methodological requirements (algorithms and/or formulae used to determine emission reductions), Risk of non-conformity with potential reversal of GHG benefits and other SDG Impacts	Document review of all the supporting evidence and comparing with the applied methodology, Registered GS4GG PDD	N/A	Positive	GS Monitoring Report
Calculation of net benefits or direct calculation for each SDG Impact	Documents shared by PD during site visit To review: - documentation/documentary evidence(s)	Yes	Risk of non-conformity with key methodological requirements (algorithms and/or formulae used to determine emission reductions), Risk of non-conformity	Document review of all the supporting evidence and comparing with the applied methodology, Registered GS4GG PDD	N/A	Positive	Registered GS4GG PDD. All the supporting evidence as above for ex ante determined and monitored parameters which are used to calculate the actual SDG Impacts

			y with potential reversal of GHG benefits and other SDG Impacts				
Comparison of actual SDG Impacts with estimates in approved PDD	Documents shared by PD during site visit To review: - documentation/documentary evidence (s)	Yes	Risk of non-conformity with key methodological requirements (algorithms and/or formulae used to determine emission reduction s), Risk of non-conformity with potential reversal of GHG benefits and other SDG Impacts	Document review of all the supporting evidence and comparing with the applied methodology, Registered GS4GG PDD	N/A	Positive	Revised MR Version 04.

Explanation of calculation of value estimated ex ante calculation of approved PDD for this monitoring period	Documents shared by PD during site visit To review: - documentation/documentary evidence (s)	Yes	Risk of non-conformity with key methodological requirements (algorithms and/or formulae used to determine emission reductions), Risk of non-conformity with potential reversal of GHG benefits and other SDG Impacts	Document review of all the supporting evidence and comparing with the applied methodology, Registered GS4GG PDD	N/A	Positive	Registered GS4GG PDD. All the supporting evidence as above for ex ante determined and monitored parameters which are used to calculate the actual SDG Impacts
Remarks on increase in achieved SDG Impacts from estimated value in approved PDD	Documents shared by PD during site visit To review: - documentation/documentary evidence (s)	Yes	Risk of non-conformity with key methodological requirements (algorithms and/or formulae used to determine emission reductions), Risk of non-conformity	Document review of all the supporting evidence and comparing with the applied methodology, Registered GS4GG PDD	CL 04 was raised and successfully closed.	Positive	Registered GS4GG PDD. All the supporting evidence as above for ex ante determined and monitored parameters which are used to calculate the actual SDG Impacts

			y with potential reversal of GHG benefits and other SDG Impacts				
Safeguards Reporting	Documents shared by PD during site visit To review: - documentation/documentary evidence (s)	Yes	Risk of non-conformity with key methodological requirements (algorithms and/or formulae used to determine emission reduction s), Risk of non-conformity with potential reversal of GHG benefits and other SDG Impacts	Document review of all the supporting evidence and comparing with the applied methodology, Registered GS4GG PDD	N/A	Positive	Registered GS4GG PDD and previous verification
STAKEHOLDER INPUTS AND LEGAL DISPUTES							

All Inputs and Grievances which have been received via the Continuous Input and Grievance Mechanism together with their respective responses/mitigations.	Site Visit checking the Expression Process Book, Conducting site interviews of project developer, staffs and end users Documents shared by PD during site visit To review: - documentation/documentary evidence (s)	Yes	Risk of any negative feedback/observations received from end-users not being addressed sufficiently by the project, Risk of key stakeholders and/or end users of project technology not willing/able to be interviewed during site visit	If any negative feedback/observations received from end-users, the VVB will record it clearly to comparing with the PD's survey data, and the sample were randomly selected more than the required size, if any end users of project technology not willing/able to be interviewed, the VVB will	N/A	Positive	Grievance Register
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				change another sample.			
Report on any stakeholder mitigations that were agreed to be monitored	Site Visit checking the Expression Process Book, Conducting site interviews of project developer, staffs and end users Documents shared by PD during site visit To review: - documentation/documentary evidence (s)	Yes	Risk of any negative feedback/observations received from end-users not being addressed sufficiently by the project, Risk of key stakeholders and/or end users of project technology not willing/able to be interviewed during site visit	If any negative feedback/observations received from end-users, the VVB will record it clearly to comparing with the PD's survey data, and the sample were randomly selected more than the	N/A	Positive	Registered GS4GG PDD and previous verification, Grievance Register.

				require d size, if any end users of project technol ogy not willing/ able to be intervi ewed, the VVB will change anothe r sample .			
Legal contest that has arisen with the project during the monito ring period	Site Visit , Conducti ng site interview s of project develope r, staffs and end users Documen ts shared by PD during site visit To review: - documen tation/do cumentar y evidence (s)	Yes	Risk of any negative feedback /observat ions received from end- users not being addresse d sufficientl y by the project, Risk of key stakehold ers and/or end users of project technolo gy not willing/ab le to be interview	If any negativ e feedba ck/obs ervatio ns receive d from end- users, the VVB will record it clearly to compar ing with the PD's survey data, and the sample were	N/A	Posi tive	Registered GS4GG PDD, Grievance Register.

			ed during site visit	rando mly selecte d more than the require d size, if any end users of project technol ogy not willing/ able to be intervi ewed, the VVB will change anothe r sample .			
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