# GS4GG
# Verification (Performance Certification) Report

Certification Pvt. Ltd.

**VKU Certification Pvt. Ltd.**

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| Project Title |
|---|
| **70 MW Bhadla Solar power plant by Fortum Finnsurya Energy Pvt Ltd (EKIESL-CDM-APRIL 16-01)** |
| Registry Project ID: **GS 5519** |
| Monitoring Period: **06-November-2022 to 30-September-2023 (Inclusive of both the dates)** |
| |
| Project Representative |
| **Infinite Environmental Solutions Limited** |
| |
| VKU Project Reference No. |
| **VKU.VER.15.23_GS_5519** |

## Executive Summary:

| A) Basic information | |
|---|---|
| Project Title | **70 MW Bhadla Solar power plant by Fortum FinnSurya Energy Pvt Ltd (EKIESL-CDM-APRIL 16-01)** |
| GS4GG Project ID: | 5519 |
| Date of Project Design Certification | 03/01/2018 |
| Last Date of Annual Report | 26/12/2023 |
| VKU Project Reference No. | VKU.VER.15.23_GS_5519 |
| Sectoral scope | Scope: 01 Energy Industries (renewable- and non-renewable sources) |
| Methodology/ies applied | ACM0002: Version 20.0 |
| Technical Area (TA) | T.A 1.2 |
| Project Representative | Infinite Environmental Solutions Limited |
| Project Developer/Investor | Fortum FinnSurya Energy Private Limited |
| GS4GG Activity Requirements | Renewable Energy Activity |
| GS4GG Certified Product | ☒GHG Emissions Reduction & Sequestration<br>☐Renewable Energy Label<br>☐N/A |
| Selected Sustainable Development Goals | **SDG 7** - Affordable and Clean Energy<br>**SDG 8** - Decent Work and Economic Growth<br>**SDG 13** - Climate Action (Mandatory) |
| GS4GG SDG Impact Statement | **SDG 7 –** 130,587.6 MWh of renewable energy generated<br>**SDG 8 –** Training – 35<br>Employment- 3[1] (Hired during current monitoring period)<br>Total Employees at the plant: 35<br>Income (INR) - The income to all the workers is made better than the minimum wage requirements (2022[2] & 2023[3]): 384 INR/day (unskilled), 423 INR/day (semiskilled), 486 INR/day (skilled) and 612 INR/day (highly skilled) |

[1] Employees hired in current monitoring period are 03 & they are all semi-skilled in nature, whereas total no. of employees are 36 working in the plant. However, the PD has employed only 3 new employees during the current Monitoring Period. Therefore, the number of employees under SDG 8 has been reported as 03 new employees during the current monitoring period, in line with the GS4GG guidelines.

[2] https://labour.rajasthan.gov.in/notification.aspx

As per minimum wages notification, 2022 by Department of Labour Rajasthan dated 20/07/2022, the workers in Rajasthan under schedule – I, s. no. 24 are required to be paid minimum wages as mentioned below:

1. Unskilled Workers - 259 INR per day or 6734 INR per month
2. Semi-skilled Workers - 271 INR per day or 7046 INR per month
3. Skilled Workers – 283 INR per day or 7358 INR per month
4. Highly Skilled Workers - 333 INR per day or 8658 INR per month

[3] https://labour.rajasthan.gov.in/notification.aspx

As per minimum wages notification, 2023 by Department of Labour Rajasthan dated 04/09/2023, the workers in Rajasthan under schedule – I, s. no. 24 are required to be paid minimum wages as mentioned below:

1. Unskilled Workers - 285 INR per day or 7410 INR per month
2. Semi-skilled Workers - 297 INR per day or 7722 INR per month
3. Skilled Workers – 309 INR per day or 8034 INR per month
4. Highly Skilled Workers - 359 INR per day or 9334 INR per month

| | | |
|---|---|---|
| | **SDG 13 –** 121,511 $tCO_2$ (GS VER) | |
| Scale of Project Activity | Large Scale | |
| **B) Verification** | | |
| Start date of crediting period | 06/11/2022 | |
| End date of crediting period | 05/11/2027 | |
| Monitoring Period | 06/11/2022 – 30/09/2023 (Inclusive of both the dates) | |
| **C) Monitoring report** | **Version** | **Date** |
| Initial | 1.0 | 01/11/2023 |
| Final | 4.0 | 01/05/2024 |
| **D) Performance Certification report** | **Version** | **Date** |
| Initial | 1.0 | 31/01/2024 |
| Final | 1.1 | 06/06/2024 |
| **E) Verification Team** | | |
| Team Leader[4] | Barun Kumar | |
| Technical Expert (TA 1.2) | Barun Kumar T.A.1.2 | |
| Validator/Verifier | Niharika Kaushik | |
| Validator/Verifier- Trainee | N/A | |
| Project Trainee | Kriti Das | |
| **F) Approvals** | | |
| Technical Reviewer[5] | Vivek Kumar Ahirwar | |
| Technical Expert (TA 1.2) | Vivek Kumar Ahirwar | |

**G) Final opinion**

VKU Certification performed the first verification after RCP of the GS4GG project "**70 MW Bhadla Solar power plant by Fortum FinnSurya Energy Private Ltd. (EKIESL-CDM-APRIL 16-01)**" with GS4GG 5519 as Reference Number. The verification includes confirmation about the implementation of the PDD/14/monitoring plan and the monitoring methodology as per **ACM0002 "Grid-connected electricity generation from renewable sources – Version 20.0)** /12/. VKU Certification confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements. The emission reductions from the GS4GG project activity ID 5519 "**70 MW Bhadla Solar power plant by Fortum FinnSurya Energy Pvt Ltd (EKIESL-CDM-APRIL 16-01)**" in India during the period **06/11/2022 – 30/09/2023 (Inclusive of both the dates)** amount to **121,511 $tCO_2e$**.

| **VVB Opinion** | **Conclusion** |
|---|---|
| Positive | ☒(Mark Tick if applicable) |
| Negative | ☐(Mark Tick if applicable) |

Therefore, VKU certification recommends a request of Issuance to GS4GG.

| **H) Authorization** | |
|---|---|
| Director | Dr. Vikas Kumar Aharwal |
| Date | 06/06/2024 |

[4] Team Leader is an approved GS Auditor for VKU.
[5] Technical Reviewer is an approved GS Auditor for VKU.

| I) Distribution | |
|---|---|
| No public distribution without written confirmation from the client. | |
| **J) Verification Status** | |
| Findings closed | Yes |
| Draft report | Yes |
| Final report | No |

## Abbreviations

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

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# 1. INTRODUCTION

## 1.1 Executive Summary

**Project Overview**

Project entails installation & operation of a 70 MW (AC) solar power initiative, executed by Fortum FinnSurya Energy Private Limited in State: Rajasthan, India. The primary objective of this undertaking is to generate clean electricity from renewable solar energy sources. The project entails the installation of **761,000** photovoltaic modules with rated capacity of **112.5 Wp, 115 Wp & 117.5Wp** respectively.

**The details of the project are mentioned in the table:**

**Table no 01: Project Capacity Details**

| Project investor's Name | Registry ID | Capacity | Total number of PV Modules | Rated Power | No of Modules |
|---|---|---|---|---|---|
| Fortum FinnSurya Energy Private Limited | GS 5519 | 70 MW (AC) | **761,000** | 112.5Wp | **88800** |
| | | | | 115Wp | **587000** |
| | | | | 117.5Wp | **85200** |

**Energy Source:**

This project harnesses solar energy to generate electricity through its **70 $MW_{AC}$** solar power installation. The generated electricity is seamlessly integrated into the Unified Indian Grid. Notably, this procedure abstains from utilizing fossil fuels, ensuring the absence of greenhouse gas emissions. Consequently, this project contributes positively to the environment by producing sustainable power without adverse ecological effects**.**

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

**Table no 02: GHG SSRs Details**

| | |
|---|---|
| **Baseline/Source** | Generation of electricity by fossil fuel- dominated grid connected power plants |
| **Project Equipment/Sink** | Avoidance of GHG emission into the atmosphere is due to generation of electricity by renewable means i.e., Photovoltaic Modules/Installed Solar Power Plant of this project and exporting to Unified Indian Grid which is in line with 3.1.1 of ISO:14064 part -2 |
| **Baseline GHG emission source reduced/avoided** | $CO_2$ emissions from fossil fuels and other fuel fired grid connected plants/projects. |

**Project Nature & Implementation:**

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

Start date of the project activity is **29-July-2016**. This is the date of purchase order made for the project activity as per registered CDM PDD.

The PV system mainly consists of PV modules, module mounting structures, inverters, regulators, monitoring devices etc.

Fortum FinnSurya Energy Private Limited is the project investor for this project activity. For this monitoring period **06/11/2022 to 30/09/2023 (both dates included)** project activity is reducing anthropogenic emissions of greenhouse gases (GHG's) **121,511 $tCO_2$**, thereon displacing **130,587.6 MWh** amount of electricity from the generation-mix of power plants connected to the Indian electricity grid, which is mainly dominated by thermal/ fossil fuel-based power plant.

**Project Location:**

The project activity is located in the **Rajasthan state of India.** The project activity is connected to Unified Indian Grid. Under this project activity 70 MW (AC) of Solar PV technology is being implemented at the below stated specific locations.

**Below table no. 03 outlines the Latitude and Longitude of the project location:**

| | |
|---|---|
| Latitude | 27° 28' 7.00" North |
| Longitude | 71° 58' 17.00" East |
| District | Jodhpur |
| Village | Bhadla |
| State | Rajasthan |
| Country | India |

A Power Purchase Agreement is signed at New Delhi on 26/04/2016 between Fortum FinnSurya Energy Private Limited & NTPC/30/ that confirms that electricity generated at the plant site is supplied to the Indian Grid.

### 1.2 Objective

Infinite Environmental Solutions Limited (Project Representative) has contracted VKU Certification Private Limited (VKU Certification) to conduct the verification and certification of emission reductions reported for the GS4GG project activity 5519 **"70 MW Bhadla Solar power Plant by Fortum Finnsurya Energy Private Ltd. (EKIESL-CDM-APRIL-16-01)"** in India for the period 06/11/2022 – 30/09/2023 (both dates included). This report contains the findings of the verification process and a certification statement for the certified emission reductions, as per GS4GG validation and verification standard v 1.0 para 1.1, 9.1 and sub para 9.1.1 /5/.

The verification is the periodic independent review and ex post determination by VKU Certification of the monitored reductions in GHG emissions that have occurred as a result of the registered GS4GG project activity during a defined monitoring period. Certification is the written assurance by VKU

Certification that, during a specific period in time, a project activity achieved the emission reductions as verified.

VKU conducted verification for the first monitoring period after RCP 06/11/2022 – 30/09/2023 (inclusive of both dates) for a period of 10 months 25 days (329 days) under second crediting period. The project activity follows a renewable crediting period of 5 years, which can be renewed a maximum of two times, as outlined in section C of GS4GG PDD /14/.

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

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

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

### 1.3 Scope and Criteria

The scope of this verification was the independent objective review and ex-post determination of the monitored reductions in GHG emissions from the "70 MW Solar power plant by Fortum FinnSurya Energy Private Ltd. (EKIESL-CDM-APRIL-16-01)". The verification of this project was based on the validated & registered GS4GG PDD /14/, Monitoring report version 1.0 dated 01/11/2023/19/ and Monitoring Report version 4.0 dated 01/05/2024/19/ and ER sheet version 1.0 dated 01/11/2023/20/ and ER sheet version 3.0 dated 01/05/2024/20/ along with supporting documents /21/ /22/ /23/ /24/ /25/ /26/ /27/ /28/ 29/ 30/ 31/ 32/ 33/ 34/ 35/ 36/ 37/ submitted by the project representative to the VKU assessment team. The documents thus submitted to the VKU Assessment/Verification Team were reviewed against the following guidance and protocol:

1. GS4GG Validation and Verification standard v1.0 para 1.2 /5/
2. GS4GG Validation and Verification standard v1.0 para 9.7.2 /5/.
3. GS4GG Principles and Requirements v1.2 /1/.
4. CDM: Tool for the demonstration and assessment of additionality - Version 07.0, EB 70 Annex 8[6]

[6] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf

5. CDM: Tool to calculate the emission factor for an electricity system - Version 07.0(EB 100, Annex 04)[7]
6. CDM: Approved Large Scale Consolidated Methodology: ACM0002 "Grid-connected electricity generation from renewable sources" (Version 20.0, EB 89, Annex 1)[8]

The steps involved are as follows:

- To assess the project's compliance with other relevant rules including the host country India legislation.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement & is sufficiently supported by evidence.
- The verification process ensures that the reported emission reductions are comprehensive and accurate in order to obtain certification.
- To establish that the data reported are accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reduction calculation /20/.
- To verify that reported GHG emission data is sufficiently supported by evidence
- The verification considers both quantitative and qualitative information on emission reductions.
- The verification also considers the monitoring of sustainable parameters.

The verification method and criteria encompassed several phases, including

- Desk Review of GS4GG project design document version 2.0 dated:12/10/2022/14/, and supporting documents listed in Section 04 of this report, which is provided by the Project Representative to assessment team.
- Onsite visit /35/ and interviews with stakeholders /38/.
- Reporting, calculation checks, QA/QC and resolution of findings
- Drafting of verification report
- Independent technical review of the project documentation
- Issuance of the final verification report
- Submission of the request for issuance, as appropriate

Outstanding issues were resolved, leading to the issuance of the final verification report and the relevant Verification Deed of Representation.

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

[7] am-tool-07-v7.0.pdf (unfccc.int)
[8] AG07ZJQ3EXD42LT5YV9HR16M8KINPO (unfccc.int)

### 1.4 Level of Assurance and Application of Materiality

All the revisions of the verification report before being submitted to the client were subjected to an independent internal technical review to confirm that all verification activities had been completed according to the pertinent VKU's procedure, with a Reasonable level of assurance, as per section 9.6 & clause 9.6.2 of GS4GG validation and verification standard v1.0 /5/ and GS4GG Principles and Requirements v1.2 /1/.

VVB applies the general requirements, consideration of materiality in planning verification and for conducting verification is as per the GS4GG validation and verification standard v1.0, para 9.6/5/. For the identification of materiality threshold VVB referred para 9.6.3 of validation verification standard v1.0 and apply to the total emission reduction achieved by the Project Activity. As per the GS4GG validation verification standard section 9.6 clause 9.6.2, the level of assurance of the verification report falls under reasonable assurance engagements with respect to material errors, omissions, and misrepresentations

**Table 04. Materiality threshold Calculation**

| Application of Materiality Threshold as per the GS4GG VVS v1.0 para 9.6.3 | Materiality threshold value ($tCO_2e$) | Reported ERs ($tCO_2e$) | | Justification (If any deviation) |
|---|---|---|---|---|
| | | In Initial MR | In Final MR | |
| 2.0% | 2430.22 $tCO_2e$ | 121,695 $tCO_2e$ | 121,511 $tCO_2e$ | Verification team confirms that as per 9.6.8 of GS4GG VVS, the materiality threshold applies to the total emission actually achieved. And since there is revision in actual emission reductions from the initial MR and the final MR, the value of materiality is revised. |

### 1.5 Basic information of project activity

**Table No 05: Project Information**

| | |
|---|---|
| **Title of project activity** | 70 MW Bhadla Solar power plant by Fortum FinnSurya Energy Private Ltd. (EKIESL-CDM-APRIL-16-01) |
| **GS4GG Reg. No.** | GS_5519 |
| **Scale of project activity** | Large Scale |
| **Applied Methodology/ies** | ACM0002 "Grid-connected electricity generation from renewable sources – Version 20.0" |
| **Sectoral Scope(s) / Technical Area(s)** | Scope: 01 Energy Industries (renewable- and non-renewable sources) |

| | |
|---|---|
| | T.A.1.2 (Solar) |
| **Project Representative** | Infinite Environmental Solutions Limited |
| **Host Country** | India |
| **Location of project activity** | The project activity is located at Bhadla Village of Jodhpur District, in the Rajasthan state of India. |
| **Start date of crediting period (with reference to this monitoring period)** | Second Crediting Period - 06/11/2022 to 05/11/2027 (both dates included) as confirmed from the section C of the registered PDD and from the Sustain Cert Project Webpage |
| **Type and length of crediting period** | Type - Renewable<br>Length - 5 years |
| **Monitoring period** | 06/11/2022 – 30/09/2023 (both dates included) |

**Table 06. VVB Information**

| | |
|---|---|
| **Name of the VVB** | VKU Certification Private Limited |
| **GS accreditation expiry date** | 20/06/2026 |
| **Is the VVB accredited for the applicable sectoral scope?** | Yes |
| **Name, position of the approver of the verification report** | Vivek Kumar Ahirwar |
| **Signature (Final version only)** |  |
| **Name, position of the authorized signatory for issuance of the verification report** | Dr. Vikas Kumar Aharwal<br>Director, VKU Certification Pvt. Ltd. |
| **Signature (Final version only)** | VIKAS KUMAR AHARWAL<br>Digitally signed by VIKAS KUMAR AHARWAL<br>Date: 2024.06.06 16:59:07 +05'30' |

**Table 07: Sustainable Development Contributions for verification**

| Sustainable Development Goals Targeted | SDG Impacts | Estimated Annual Average | Units |
|---|---|---|---|
| **7 Affordable and Clean Energy** | MWh of renewable energy generated | 121,420 | MWh |
| **8 Decent Work and Economic Growth** | Training<br>Employment | Training- 01<br>Employees- 10 | No of Training, Annum<br>No. of Employee |
| **13 Climate Action (Mandatory)** | Emission Reduction | 112,980 | $tCO_2$ (GS-VERs) |

## 2. METHODOLOGY

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

The assessment involved a desk review of relevant documentation as well as an **on-site verification /35/.** The personnel employed and their roles in this assessment is mentioned below;

**Table No 08: Verification Team member(s)**

| S.No. | Full Name | Role(s) | Type of Resource | Type of Activity(ies) carried out |
|---|---|---|---|---|
| **1.** | Barun Kumar | Team Leader cum Technical Expert (TA 1.2) | Internal Resource | DR/OSV/I/VF/FVR[9] |
| **2.** | Niharika Kaushik | Validator/Verifier | Internal Resource | DR/VF/DVR/FVR |
| **3.** | Kriti Das | Project Trainee | Internal Resource | DR/OSV |

**Table no 09: Technical Reviewer and approver(s) of the verification report**

| S.No. | Full Name | Role(s) | Type of Resource | Type of Activity(ies) carried out |
|---|---|---|---|---|
| **1** | Vivek Kumar Ahirwar | Technical Reviewer cum Technical Expert (TA 1.2) | External Resource | Technical Review |

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

**Table no 10: Verification milestones**

| | |
|---|---|
| Monitoring report submission: | **01/11/2023** |
| On-site assessment and Interview: | **07/11/2023** |
| Draft Verification Report | **30/01/2024** |
| Final Verification Report | 06/06/2024 |

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

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

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

The project activity does not fall under category "grouped projects", hence no sampling methods was employed by the assessment team and during onsite visit /38/ assessment team reviewed 100% data for this project at site for the verification of GHG emission reductions generated by the project.

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

Tools used for GHG Calculations are as follows as per registered PDD/14/:

- Methodological Tool- Tool for the demonstration and assessment of additionality - Version 07.0.0 (EB 70, Annex 08) /17/
- Tool to calculate the emission factor for an electricity system, Version 07.0 (EB 100, Annex 04) /18/

Keeping in line with ISO (14064-3; 2019, clause 06 & 14065-2020, clause 09) Standard guidelines assessment team has framed down the process for completing the verification and has followed the same throughout the execution of audit of the said project GS 5519.

The verification consisted of the following phases.

a. **Planning:** The assessment team plans the GHG-programme and starts with a desk review.

b. **Strategic Analysis:** Assessment team performed strategic analysis to understand the activities and complexity of the project, and to determine the nature and extent of the verification activities. The results of the strategic analysis shall be used in the risk assessment.

c. **Risk Assessment;** Assessment team performed risk assessment of the GHG statement to identify the risk of a material misstatement or nonconformity with the criteria. /41/

d. **Evidence Gathering Activities;** Using a risk-based approach assessment team prepared evidence gathering activities, to collect sufficient and appropriate evidence upon which the conclusion shall be based. It will also determine whether the GHG statement conforms to the criteria, taking into account the principles of the standards or GHG programme that apply to the GHG statement.

e. Need for site visit is identified and site visit is planned.

f. **Audit and Sampling Plan:** An audit plan is prepared, including all sub-elements required for an integrated verification process aligned with the contract, scope, objectives, level of assurance and materiality. /42/

g. **Evidence Gathering Plan;** The evidence-gathering plan is prepared based on the results of the VKU's Assessment Team's risk assessment. It was designed to lower the verification risk to an acceptable level. The evidence-gathering plan thus specify the type and extent of evidence-gathering activities. /43/

h. **Client Confirmation and Approval:** The site visit audit plan is sent to the client for review and confirmation/approval via email.

i. **Document Review:** Relevant documents, such as the verification report, monitoring plan, methodology, GS PDD and QA/QC procedures are thoroughly reviewed.

j. **On-Site Assessment:** This includes interviews and evaluation of the actual project scenario. /35/

k. **Resolution of Discrepancies:** Any non-conformities identified during the assessment are addressed and resolved.

l. **Independent Review:** A technical reviewer provides an independent assessment.

m. **Final Verification:** After completeness checks, the verification report and certification are issued.

The following sections outline each step in more detail.

### 2.1 Desk Review or Document Review

VKU Certification conducted a desk review or document as under;

During the document review, VKU has applied standard auditing techniques to assess the quality of information provided. The verification was performed primarily based on the review of monitoring report (MR) version 4.0 dated 01/05/2024 /19/ and emission reduction (ER) version 3.0 dated 01/05/2024 /20/ calculations spreadsheet were received from PDD /14/ and assessed along with the monitoring reports as part of the verification. In addition, the registered GS4GG PDD /14/ was also reviewed, for the baseline estimations and the monitoring plan.

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

**Document review involving:**

- A review of the data and information presented to verify their completeness;
- A review of the monitoring plan, the monitoring methodology including applicable tool(s) and, where applicable, the applied standardized baseline, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures;
- An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions;

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

### 2.2 Site Visits (Onsite)

The project activity is located at Bhadla Village of Jodhpur District, in the Rajasthan state of India. Further the location along with longitude and latitude is mentioned in section 3.1.2. of this report. A site visit /38/ was undertaken by VKU Certification on **07/11/2023** as per the "GS4GG site visit and remote audit requirements and procedures" v 2.0 dated 30/05/2023 /6/ and "GS4GG applicability of minimum site visit requirement by VVB" dated 16/08/2021 v 2.0 /7/ and mentioned to carry out following;

- An assessment of the implementation and operation of the registered project activity as per the registered PDD /14/;
- A review of information flows for generating, aggregating, and reporting the monitoring parameters;

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

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

**Interview**

An on-site inspection /38/ has been performed by the assessment team. Representatives of the PP and O&M team [10]were interviewed /38/ personally by assessment team on **07/11/2023** at Bhadla Villages of project implemented district in Rajasthan state, India. Personnel responsible for monitoring of project activity, data collection, management, and QA/QC procedure were also interviewed. These tables outline the personnel involved in the interviews, along with their respective roles. The interviews specifically targeted individuals responsible for monitoring -of project activity, data collection, quality assurance and quality control (QA/QC) procedures.

**Table no 11: Duration of Onsite Inspection: 07/11/2023**

| S. NO | Name | Role | Location of Site | Activity Performed On-Site |
|---|---|---|---|---|
| 1 | Barun Kumar | Team Leader cum Technical Expert (TA 1.2) | Bhadla, Jodhpur Rajasthan | • An assessment of the implementation and operation of the GS4GG project activity as per the PDD<br>• A review of information flows for generating, aggregating and reporting of the monitoring parameters.<br>• Interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the Monitoring Plan<br>• A cross-check between information provided in the MR and data from other sources<br>• A check of the monitoring equipment including calibration performance, and |

[10] The responsibility of operation and maintenance of the plant lies with the PP itself i.e. Fortum FinnSurya Energy Private Limited.

| | | | | |
|---|---|---|---|---|
| | | | | observations of monitoring practices against the requirements of the PDD and the applied methodology<br>• A review of calculations and assumptions made in determining the GHG data and ERs, and<br>• An identification of QA/QC procedures in place to prevent, or identify and correct, any errors or omissions in the reported monitoring parameters |

The topics covered during interview ranges from general features and implementation of project to technical details of the project like calibration, monitoring and measuring system, data collection, recording, emergency procedures internal audit, Procedures for handling non-conformances with the validated monitoring plan, personal training, and archiving procedures. The assessment was based on the feedback received during onsite interview coupled with the documentation in VKU.F64W.Field Assessment Checklist for Onsite Visit /35/. The tables serve to identify the individuals interviewed and provide relevant information regarding their roles within the project.

During Onsite Visit/38/, local stakeholders involved in the projects /38/ have been also interviewed to verify implementation of grievance mechanism and process of its resolution, as mentioned in the Monitoring report/19/. It also included confirmation of sustainable development claims and verification of the socio-economic impact made by the project on the local community. VKU also checked records and observed that the PP has provided opportunities for the locals to express their opinions and grievances. Project developed has put efforts to resolve issues through effective communication & consultation with stakeholders. VKU could verify & confirm all the above statements via focussed group discussions and personnel interview/38/ with stakeholders as tabulated below:

**Table no 12.1: Personnel Interview and Focussed Discussion with Site Personnel**

| S.No | Interview | | Date | Subjects | Team Member Involved |
|---|---|---|---|---|---|
| | Name | Affiliation | 07/11/2023 | 1. Operation and maintenance Procedures, Calibration, JMR.<br>2. Local employment, trainings,<br>3. Monitoring of SDG parameters<br>4. Data archiving, breakdown details | Barun Kumar |
| 1 | Hemant Kumar | Fortum Chief Manager | | | |
| 2 | Rahul Bhardwaj | Senior Engineer | | | |
| 3 | Amit Kumar Gupta | HR and Compliance Consultant | | | |

| | | | | | |
|---|---|---|---|---|---|
| | | | | 5. O&M of the plant site and personnel responsible for monitoring of required monitored parameters and implementation of QA/QC Procedure.<br>6. Stakeholder meeting Employment opportunities, Standard of Livings etc. | |

**Table no 12.2: Personnel Interview and Focussed Discussion with Local Stakeholder**

| S.no | Name | Gender | Category | Topic of Discussion |
|---|---|---|---|---|
| **1** | Buddi Singh | Male | Local Stakeholder-Villager | Execution of Project activity and its impact on the economic, social and environmental parameters on the local people of the area & around the situated project activity<br>The ongoing communication procedure and the address of their grievance mechanism followed by the project proponent<br>Scope and generation of employment in the locality due to the implementation of said project activity in the area.<br>The ongoing trainings provided to the locals for self-employment. |
| **2.** | Hem Singh | Male | Local Stakeholder-Villager | |
| **3** | Bhura Ram | Male | Local Stakeholder-Villager | |
| **4** | Kasam Khan | Male | Local Stakeholder-Villager | |

VKU's Assessment Team in a form VKU.F46W. Attendance Sheet of Onsite audit /43/ wrote the names of personnel present during opening and closing meeting and those who were interviewed. Names of stakeholders were also recorded and there were no negative comments received during the stakeholder consultation interview /38/ conducted on site.

**Privacy concerns undertaken by the VVB:** It is to confirm that before the onsite visit, VVB usually shares its audit plan that comprises of details of activities to be conducted during the planned onsite/remote audit whichever is applicable. Since this was an onsite audit hence details related to same were shared with client prior to the audit and an acknowledgement was undertaken regarding the activities to be performed by the VVB. Client shared the acknowledgement and further while onsite VVB was interviewing the site in-charge, or other site personnel including the local stakeholders were explained by the assessment about the requirement of the information and only on voluntary basis the

names were provided to the assessment team that are already documented above in the table. VVB has a stringent guideline from its accreditation body regarding the consent policy and does not perform any action during the verification assessment that might breach the privacy of the project or the people involved in the project activity.

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

### 2.3 Reporting of Findings

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

CAR (Corrective Action Request) is raised if one of the following occurs:

- Non-compliance with the monitoring plan, the methodology or the standardized baseline 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.

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

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

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

In summary, **02 CLs, 03 CARs and 00 FARs** was raised during this verification which were closed successfully.

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

### 2.4 Technical Review

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

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

## 3. VERIFICATION FINDGINGS

This section summarises the findings from the verification of the emission reductions reported for the 70 MW Bhadla Solar power plant by Fortum FinnSurya Energy Private Ltd. (EKIESL-CDM-APRIL-16-01) in Rajasthan for the monitoring period 06/11/2022 – 30/09/2023 (both dates included).

The project has exclusively applied for registration under the Gold Standard (GS) with ID: 5519. This sole registration status has been confirmed through rigorous scrutiny of the Gold Standard registry website. A similar comprehensive search was conducted across the CDM (Clean Development Mechanism), VCS (Verified Carbon Standard), GCC (Global Carbon Council) and UCR (Universal Carbon Registry) etc registries, using matching project titles and capacity, as well as Project Proponent details. This diligent examination did not yield any instances of the project being registered under any of the aforementioned registries or any comparable mechanisms.

**Verification through Declaration:**

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

**Cross-Verification of GHG Benefits:**

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

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

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

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

### 3.1 Description of project

#### 3.1.1 General description of project

| | |
|---|---|
| **Verification Means** | **Means:** During desk review and Onsite Inspection<br>**Activity Performed:** The Assessment Team verified MR version 1.0 dated: 01/11/2023 and final MR version 4.0 dated 01/05/2024/19/, PDD, with the GS PDD & further with supporting documents submitted by the PD i.e., Last Verification Report /16/, Validation Report /15/ Commissioning certificate/21/ & Power Purchase Agreement /30/ etc |
| **Findings** | CAR#01 was raised and resolved, please refer Section 06 for detailed analysis of the finding raised. |
| **Conclusions** | Verification is done in accordance with the registered PDD. General description of the project was verified via Commissioning certificates, PPA.<br>Since all data was verified thoroughly, the Assessment Team can ascertain that the description of the project mentioned is in line with GS4GG standards Version 1.0. and Principle and Requirements v1.2. |

#### 3.1.2 Location of Project

| | |
|---|---|
| **Verification Means** | **Means:** During desk review and Onsite Inspection<br>**Activity Performed:** The assessment team verified MR version 1.0 dated: 01/11/2023 and final MR version 4.0 dated 01/05/2024/19/, with the GS |

| | |
|---|---|
| | PDD & further with supporting documents submitted by the PD i.e., Last Verification Report /16/, Validation Report /15/,<br>Assessment Team used GPS Map Camera: Geotag Photos & Add GPS Location / 37/ during site visit to confirm the location and geo-tagged the evidences collected/recorded,<br>Also, during desk-review, team employed Google Earth Pro Software /37/ to confirm if the site to be visited is actually installed and reflected at the geo-coordinates defined in the registered PDD. Please refer the image below to confirm the same.<br>  |
| **Findings** | No CAR or CL were raised in this section. |
| **Conclusions** | Verification is done in accordance with the registered monitoring plan and was verified using Google earth pro during desk review and via GPS Map Camera app during on-site visit.<br>Since, 100% data was verified, the assessment team can ascertain that the location of project mentioned is correct and in compliance. |

### 3.1.3 Reference of applied methodology

| | |
|---|---|
| **Verification Means** | **Means:** During desk review and Onsite Inspection<br>**Activity Performed:** The Assessment Team verified MR version 1.0 dated: 01/11/2023, final MR version 4.0 dated 01/05/2024 & ER Sheet/20/, with registered GS PDD /14/ & applied methodology ACM0002 Version 20.0 as this a large-scale solar project. /12/ |
| **Findings** | CAR 01- was raised and was further closed successfully, please refer Section 06 for detailed analysis of the finding raised. |
| **Conclusions** | Verification is done in accordance with the registered PDD and applied methodology ACM0002 Version 20.0 as this a large-scale solar project.<br>Since data mentioned in MR was verified thoroughly via registered PDD, the assessment team can ascertain that the description of the methodology used in the project mentioned is in line with GS4GG standards.<br>The link provided for the reference of the applied methodology was incorrect which was further updated by the PD. |

### 3.1.4 Crediting period of Project

| | |
|---|---|
| **Verification Means** | **Means:** During desk review and Onsite Inspection<br>**Activity Performed:** The assessment team verified MR version 1.0 dated: 01/11/2023 and final MR version 4.0 dated 01/05/2024 /19/, with registered GS PDD /14/ & further with supporting documents submitted by the PD i.e., Last Verification Report /16/, Validation Report /15/ |
| **Findings** | No CAR or CL were raised in this section. |
| **Conclusions** | Verification Team assessed that this is the 2nd crediting period of the given project activity i.e., from 06/11/2022 to 05/11/2027 (Length of 5 years and renewable). This was verified via registered PDD and GS impact registry. Based on this, it can be concluded that crediting period start date and its length is correct and is in line with GS4GG VVS/5/, GS4GG principles and requirements /1/. |

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

This is first verification of the project activity after RCP. Based on the review of the Verification Report/16/ and previous Validation Report /15/, assessment team confirms that four FARs were raised during last Verification and Validation (01/07/2021 – 05/11/2022; Inclusive of both start and end dates)

**FAR 01:** Refer Site Visit and Remote Audit Requirements §3.2.2 "A physical site visit by VVB is mandatory at the next verification of a project".

**VVB's Response:**
As per Site Visit and Remote Audit Requirements and Procedures section 3.2.2, "A physical site visit by VVB is mandatory at the first verification of a project." Since this verification is the first verification under Crediting Period 02 of the project, the VKU Certification Private Limited has conducted physical site visit on 07/11/2023. Hence confirming the implementation of the FAR raised during the performance review at RCP during the current monitoring period. The same was confirmed/discussed with PP during the Interview/Focussed Grouped discussion at project site on 07/11/2023.

**FAR 02:** Transparent, annual update reports need to be provided for Projects that have achieved the Project Design Certification stage. An annual report shall be submitted for each monitoring year by end of next calendar year for which verification is not completed. If a verification is in progress but not completed, then an Annual Report is still required by the end of calendar year.

**VVB's Response:**
The project activity has already completed verification and performance review for period till 05/11/2022. The documents for the same are available at the GS website, as cross-checked by the VVB during the desk-review and can be cross-referenced from the link: https://platform.sustain-cert.com/public-project/1475
VVB herby confirms that the FAR stated above with respect to the Annual Report has been addressed by the PD and the Annual report for the period from 06/11/2022 to 30/09/2023 has been submitted to SustainCERT on 26/12/2023, confirmed by the PD in the Latest MR Report submitted to the assessment team & the annual report dated 26/12/2023 has been submitted to the VVB.

**FAR 03:** In-line with GS4GG Principles and Requirements, VVB and PP shall consider the following rule after Design Renewal Certification is achieved: 5.1.29: 1st verification shall be completed within two years after the certification is achieved.

**VVB Response:**

The Design Renewal Certification was achieved on 17/03/2023. The 1st verification is already initiated in line with the GS4GG Principles and Requirements with VKU Certification Private Limited, which is a GS accredited VVB. Further in-line with the rule after Design Renewal Certification i.e., 5.1.29 "1st verification shall be completed within two years after the certification is achieved" The current monitoring period encompasses from "06/11/2022 to 30/09/2023 (Inclusive of both the days)

**FAR 04:** As during the GS-RCP of the project activity, Validation team found that crediting period is not in line with the GS mirroring guidelines and under CDM mechanism RCP is still pending. Therefore, FAR has been raised for the upcoming VVB team to ensure that RCP has been done in CDM mechanism too.

**VVB's Response:**

VVB confirms the following:

1. Adherence to GS4GG Requirements: The Assessment Team has verified that the project is required to undergo Design Certification Renewal every 5 years to maintain its certified status beyond the initial 5-year period, as per section (e), paragraph 5.1.45 of the GS4GG Principles & Requirements version 1.2. Additionally, section 6.5, paragraph 6.5.1 of the GHG Emissions Reduction & Sequestration Product Requirements version 2.2 stipulates that Transition projects, like this one, must adhere to the GS4GG certification cycle for the renewal of the crediting period (e.g., every 5 years) to facilitate the issuance or conversion of emission reductions to GS-VERs under GS4GG.
2. Project Transition to GS4GG: The Assessment Team has confirmed that the project has already completed its transition from the CDM to the GS4GG framework and is now claiming GS-VERs. As evidenced from the GS RCP-PDD uploaded on the project's webpage, the PD has opted for a 5-year renewable crediting period cycle, with a total crediting period of 15 years, in line with the GS4GG requirements.
3. CDM Crediting Period Renewal Challenges: The project is registered under the CDM with an initial 7-year renewable crediting period, with the first crediting period being from 06/11/2017 to 05/11/2024. The project is still valid under the CDM but is not claiming any Certified Emission Reductions (CERs). However, the CDM Registry is not accepting any submissions for requests for renewal of crediting periods relating to the period after 2020 from 30/06/2023 onwards. Therefore, the PD is unable to complete the Crediting Period Renewal under the CDM mechanism.
4. Declaration of No Double Counting: The PD has submitted a declaration stating that they will not claim any credits for this monitoring period under any GHG program, including the CDM, which is not accepting any renewal requests. The Assessment Team finds this declaration acceptable, given the limitations in the CDM mechanism regarding the Crediting Period Renewal.

Given the above circumstances, the Assessment Team concludes that the PD's justification for not being able to complete the Crediting Period Renewal under the CDM mechanism is reasonable and acceptable. The PD has clearly demonstrated their adherence to the GS4GG requirements, the challenges faced due to the transition from the CDM, and the limitations in the current regulatory frameworks. Furthermore, the PD's commitment to not claim any credits under any other GHG program, including the CDM, during this monitoring period further strengthens the justification and ensures the integrity of the carbon credits being claimed under the GS4GG framework.

### 3.3 Post registration changes

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

| Type of change(s) | **Corrections** |
|---|---|
| **Description of change(s)** | Total installed DC capacity of the project is 87.5 MWp since commissioning of the project. There has been a typographical error while mentioning the DC capacity in the PDD for the 2nd crediting period. However, there is no change in number modules and their capacity. Also, the capacity has also been same i.e. 70 MW(AC) from the beginning of the project, which was used to demonstrate the additionality of the project. |
| **Assessment of change(s)** | The assessment team confirmed the AC & DC capacity of the solar plant with the nameplates installed on project implemented site and also confirmed with the site personnels during personal interviews and focussed group discussions about the number of plant modules and the running capacity of plant current. Further assessment team also cross-checked the commissioning certificate and confirmed that the AC capacity of the solar plant is 87.5 MW & 70 MW respectively.<br><br>*Note: It is to notify that similar correction was requested by the PD in the 5th performance review of the 1st crediting period & changes were made in the last PDD of 1st crediting period. VVB referred the last PDD and 5th verification to confirm the DC capacity of the plant, hence found those records correct.* |
| **Opinion on change(s)** | The assessment team herby confirms that this correction is reasonable and relevant as per the project's additionality and baseline scenario, however not making an impact on either one of them also there is no impact on the generation of emission reductions are concerned. Hence, VKU finds this correction requested by the PD deemed authentic, reasonable & correct. |

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

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

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

### 3.4 Description of monitoring system applied by the project

Project entails installation & operation of 70 MW (AC) grid connected solar photovoltaic power plant. The monitoring plan has been crafted in alignment with the guidelines and processes established for the GS4GG project in Rajasthan, India, specifically for grid-connected solar power projects.
The project activity is estimated to operate with a plant load factor of 20%, which enables it to export **121,420 MWh** of electrical energy annually to the Unified Indian grid. This, in turn, leads to an average annual reduction of **112,980 metric tons of carbon dioxide ($tCO_2e$)** per year stemming from the project's operations. It's worth noting that the project activity does not entail any technology transfer.

**Table No 13: Commissioning dates for the project activity**

| S.No. | Organization name | Location | Capacity (AC) | Date of Commissioning |
|---|---|---|---|---|
| 1 | Fortum FinnSurya Energy Private Limited | Village Bhadla, District-Jodhpur, Rajasthan, India | 70 MW | 31/03/2017 |

**Table no 14: Technical specifications /22/**

| | | |
|---|---|---|
| **Capacity** | 70 MW (AC) / (87.5 MWp) | |
| **SPV Modules – Type/make** | Thin film Cadmium Telluride (CadTel)/ First Solar | |
| **No. of Photovoltaic Modules / Rating** | 112.5 Wp | 88800 |
| | 115 Wp | 587000 |
| | 117.5 Wp | 85200 |
| **Inverters – Type/make** | String/ABB | |
| **No. of Inverter / Rating** | 70 /1000 KVA | |
| **Name of Substation** | 220kV pooling substation (GSS – II) at Bhadla Village | |

The monitoring plan adheres to the guidelines for GS project activities and is proposed for a grid-connected solar power project in Rajasthan, India. The plan, executed by the project participant, delineates the monitoring organization, parameters, practices, quality assurance, quality control procedures, and data storage and archiving.

**Monitoring Data:** The ex-post monitored parameter is the net electricity supplied to the grid ($EG_{PJ,y}$) in the year y.

**Measurement Method:** $EG_{PJ,y}$ is measured by a main meter at the 220kV pooling substation (GSS – II) in Bhadla Village. Check and Standby meters are installed for redundancy. On-grid electricity is continuously monitored and recorded monthly. Meters are bi-directional with an accuracy class of 0.2s. Measurement results are cross-checked with records from invoices.

Collected data are electronically archived for at least 2 years after the last crediting period. Meters are calibrated every five years, following the Central Electricity Authority (Installation & Operation Meters) Regulations, 2006.

**Data Measurement:** Export and import energy are continuously measured using Main and Check meters at the substation. The main meter is utilized for billing, with the check meter as backup. Monthly readings are taken by authorized officers of JDVVNL (Jodhpur Vidhyut Vitran Nigan Limited) and RSDCL (Rajasthan SolarPark Development Company Limited) in the presence of the project participant or their representative.

**Data Collection and Archiving:** Meter readings are collected daily in the presence of the plant in-charge. Export and import data are recorded and stored in logs and electronically on a daily basis. Records are periodically checked by the Plant Manager and discussed with the plant supervisor. Monitored data will be stored for 2 years after the crediting period or the last issuance of GS-VERs, whichever occurs later.

**Emergency Preparedness:** No unidentified activities leading to substantial emissions are anticipated from the project activity, eliminating the need for emergency preparedness in data monitoring. In case Main meter or Check meter is found to be outside the acceptable limits of accuracy or faulty or not functioning properly, it will be repaired, recalibrated or replaced as soon as possible. In the event that the Main meter will not be in service as a result of maintenance, repairs or testing, the Check meter will be used for readings. In case both the main and check meter are found to be outside the acceptable limits of accuracy or faulty or not functioning properly, both the meters will be calibrated immediately, and the error percentage found in the main meter during its calibration will be applied to its metered energy data for the entire period since its last calibration to obtain the corrected value of net electricity exported to the grid**.**

**Authority and Responsibility:** The project participant holds authority and responsibility for registration, monitoring, measurement, reporting, and data review. The proposed team structure includes members responsible for data monitoring, collection, archiving, and equipment calibration.

The responsibility of operation and maintenance of the plant lies with the PP itself i.e. Fortum FinnSurya Energy Private Limited.

**O & M Head**

- Reviewing the monthly and annual generation statistics.
- Evaluating the GHG performance of the project activity.
- Identifying the opportunities for future improvement.
- Addressing the grievance related to project activity.
- Sends the monitored data to consultants for emission reduction calculations.

**Site In-charge/ Technician/ Supervisor Organization:**

- Primarily collects data.
- Conducts regular testing and calibration of monitoring equipment.
- Monitors, records, reports, and archives data.
- Prepares credit statements.
- Implementation of corrective appropriate measures in case any discrepancies are identified in the reported parameters.
- The authority and responsibility for registration, monitoring, measurement, reporting and reviewing of the data rests with the project participant.

**Personnel Training:** Staff has been trained to ensure the proper functioning of the project activity and accurate monitoring of emission reductions. Plant helpers are trained in equipment operation, data recording, report writing, operation and maintenance, and emergency procedures as per the monitoring plan.

Metering Arrangement: Billing meters (main and check meters) are installed at 132/220 KV RSDCL GSS – II pooling station, as indicated in the schematic diagram for Bhadla Solar Phase II for 70 MW Fortum FinnSurya Energy Pvt. Ltd

**Table no 15.1: Details of trainings conducted during current MP**

| S. No. | Date | Topic of Training | Trainer | Trainee (Number) | Duration (HH:MM) |
|---|---|---|---|---|---|
| 1 | 09/11/2022 | Use of PPE, Helmet, Shoes, Ear Plugs | Rahul Bhardwaj | 6 | 01:00 |
| 2 | 11/11/2022 | Fire Fighting | Deepak Dogra | 5 | 01:00 |
| 3 | 17/11/2022 | EHS Training | Rahul Jain | 6 | 01:30 |
| 4 | 22/11/2022 | Awareness Session for POSH | Ms. Deepa | 19 | 01:30 |
| 5 | 15/12/2022 | Communication Skills | Dilip Paliwal | 9 | 01:00 |
| 6 | 30/12/2022 | Site Specific Hazards and Precaution Response to Hazards | Deepak Dogra | 7 | 01:00 |
| 7 | 02/01/2023 | First Aid Training | Rahul Bhardwaj | 10 | 01:00 |
| 8 | 08/01/2023 | ISO Awareness Program | Deepak Dogra | 8 | 01:00 |
| 9 | 14/01/2023 | Fortum Code of Conduct | Hemant Kumar | 7 | 01:00 |
| 10 | 16/02/2023 | 5S Workshop | Amit Ghai | 17 | 08:00 |
| 11 | 17/02/2023 | 5S Workshop | Amit Ghai | 19 | 08:00 |
| 12 | 18/02/2023 | Fire Fighting | Deepak Dogra | 8 | 01:00 |
| 13 | 06/03/2023 | LOTO | Deepak Dogra | 10 | 01:00 |
| 14 | 07/03/2023 | Fire Fighting | Deepak Dogra | 9 | 01:00 |
| 15 | 21/03/2023 | Use of PPE | Rahul Bhardwaj | 16 | 01:00 |
| 16 | 28/03/2023 | Safety Training for Contractors | Hemant Kumar | 13 | 01:00 |
| 17 | 03/04/2023 | Site Specific Hazards and Precaution Response to Hazards | Deepak Dogra | 11 | 01:00 |
| 18 | 10/04/2023 | Fortum Safety Ground Rules | Deepak Dogra | 8 | 01:00 |
| 19 | 24/04/2023 | Response in Case of Emergency | Rahul Bhardwaj | 9 | 01:00 |
| 20 | 08/05/2023 | Engineering & Safety Techniques | D. Gopala | 9 | 01:00 |
| 21 | 09/05/2023 | Engineering & Safety Techniques | D. Gopala | 11 | 02:30 |
| 22 | 09/05/2023 | Security | D. Gopala | 8 | 01:00 |
| 23 | 24/05/2023 | First Aid Training | Rahul Bhardwaj | 10 | 01:00 |
| 24 | 13/06/2023 | Communication Skills | Hemant Kumar | 7 | 01:00 |
| 25 | 17/06/2023 | Electric Shock Handling | Deepak Dogra | 7 | 01:00 |
| 26 | 23/06/2023 | Basic Fire Safety | Dinesh Kumar | 24 | 03:00 |
| 27 | 26/06/2023 | Safety Training for Contractors | Deepak Dogra | 10 | 01:00 |
| 28 | 11/07/2023 | Site Specific Hazards and Precaution Response to Hazards | Deepak Dogra | 7 | 01:00 |
| 29 | 25/07/2023 | Use of Personal Protection Equipment | Rahul Bhardwaj | 7 | 01:00 |
| 30 | 27/07/2023 | Fortum Code of Conduct | Hemant Kumar | 7 | 01:00 |
| 31 | 10/08/2023 | Fire Fighting | Deepak Dogra | 9 | 01:00 |
| 32 | 28/08/2023 | LOTO & HIRA | Pankaj | 28 | 08:00 |
| 33 | 18/09/2023 | Toolbox Training | Deepak Dogra | 7 | 01:00 |
| 34 | 27/09/2023 | Safety Training for Contractors | Deepak Dogra | 12 | 01:30 |
| 35 | 30/09/2023 | Communication Training | Akshay Agrawal | 15 | 05:00 |

**Table no 15.1: Details of Breakdown recorded during current MP**

Despite higher 19.32% emission reductions achieved during the current monitoring period; the following breakdowns were noted:

| S. No. | Month | Inverter | Error Description | Duration (HH:MM) |
|---|---|---|---|---|
| 1 | Nov'22 | String 1, 2, 3, 6, 7, 9 | Inverter was down due to fault, String was down due to Rain, Inverter was down due to GND Fault Error | 206:36 |
| 2 | Dec'22 | String 1, 2, 3, 6, 8, Power Transformer - 02, Power Transformer – 01, Block-05, Block-09 | Inverter was down due to fault, String was down due to Fog, inverter down due to O/G Panel Breaker Problem, Power Transformer-102 & 101 Manual shutdown | 588:50 |
| 3 | Jan'23 | String 1, 2, 3, 5, 6, 9, Power Transformer – 02, Block-07 | Inverter was down due to fault, String was down due to Fog, Power Transformer-102 trip due to Voltage Fluctuation, Inverter down due to Aux supply fail | 746:24 |
| 4 | Feb'23 | String 1, 2, 5, 7, 9 | Inverter was down due to fault, Inverter was Manual Shutoff, String was down due to Drizzling | 102:27 |
| 5 | Mar'23 | String 1, 2, 5, 7, 9, Transformer-1B, PTF-101, Transformer-3B, Transformer-3A, Block-08 | String was down due to Drizzling, Inverter was down due to fault, Inverter down due to Aux supply fail, String was down due to Foggy Weather, SF6 Trip Earth fault and over current, Transformer 3A & 3B down due to fault, PEB 01 Traformer-1B Trip | 164:22 |
| 6 | Apr'23 | String 1, 2, 3, 5, 6, 7, 8, 9, Transformer-6A, Transformer-6B | Inverter was down due to fault, Inverter down due to Aux supply fail, Transformer 6A down due to fault, Transformer 6B down manual off | 32:58 |
| 7 | May'23 | String 1, 2, 3, 5, 6, 9, Block-07, Block-09, Transformer-9B, | CMCS I/C-07 down due to O/C & E/F fault, Inverter was down due to fault, Inverter was down due to manual off, String was down due to Drizzling, String was down due to Fog | 159:14 |
| 8 | Jun'23 | String 1, 2, 3, 5, 7, Block-07 | Inverter down due to Aux supply fail, Inverter was down due to fault, String was down due to Drizzling, String was down due to GND Fault | 784:23 |
| 9 | Jul'23 | String 1, 2, 3, 4, 5, 6, 7, 8, 9, Block-08 | SMB was down due to DC Cable Fault, Inverter was down due to fault, String was down due to Drizzling, Inverter down due to Aux supply fail, | 629:18 |
| 10 | Aug'23 | String 1, 2, 3, 4, 7, 9, 8, Block-04, Block-07, Transformer-4A, smb#3F-7 | Inverter down due to O/C & Earth Fault, Inverter was down due to fault, Inverter down due to Aux supply fail, SMB was down due to DC Cable Fault, | 39:44 |

| | | | | |
|---|---|---|---|---|
| | | | Inverter was down due to Under Voltage Gss-02 Side | |
| 11 | Sept'23 | String 1, 2, 3, 6, 7, 8, smb#8D-5 | Inverter was down due to fault, String was down due to Drizzling, SMB was down due to DC Cable Fault | 29:40 |
| Total | | | 3483:56 | |

### 3.4.1 Compliance of monitoring plan with monitoring methodology

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

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

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

Billing Mismatch: For the monitoring period not matching with the dates of the billing cycle i.e. 06/11/2022 to 30/11/2022, (for current monitoring period) the net electricity exported to the grid is calculated from:

• Data collected by PP from energy meters installed at the plant end and recorded daily in the Daily Generation Report (DGR).

• Apportioning the net electricity exported to grid, as recorded in the monthly JMR, based on the number of days in the monitoring period and the number of days for which Joint Meter Reading report was taken. The net electricity exported to the grid is calculated from:

Net electricity exported to the grid = (A/B) * C

Where:

A= Number of days matching in billing period and monitoring period.

B= Total number of days of the billing period/month

C= Net electricity supplied to the grid for that given billing period/month

Calculation of net electricity exported to the grid was calculated by both the approaches and conservative value among the two is used for calculation of emission reductions during the particular period.

**VVB's opinion:** The VVB has reviewed the project developer's approach used to determine the net electricity exported to the grid during the monitoring period when it did not match the billing cycle is appropriate and conservative. The following was noted:

- The project developer has followed the procedure outlined in the registered GS PDD, which states that in case the billing cycle and monitoring period do not match, the daily generation data should be used to determine the net electricity export.
- In this specific case, the project developer has adopted a conservative approach by:
    a. Calculating the net electricity exported using both the daily generation data and the apportioned value from the monthly Joint Meter Reading (JMR) report.
    b. Using the lower, more conservative value of the two for the emission reduction calculations.
- The revised emission reduction calculation sheet (Tab 02 of ER Sheet) monitoring report & Verification Report now clearly document this approach, providing transparency on the methodology used.
- The VVB confirms that the project developer has appropriately applied apportionment to remove the electricity generation from 01/11/2022 to 05/11/2022, as the billing cycle was from 01/11/2022 and the monitoring period start date was 06/11/2022.

The VVB is satisfied that the project developer has appropriately addressed the discrepancy identified and has implemented a robust, conservative approach to determining the net electricity exported during the monitoring period. This ensures the accuracy and reliability of the emission reduction calculations.

### 3.4.2 Compliance of monitoring activities with the registered Monitoring plan

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

<table>
<tr><td>Verification Means</td><td>Means: During desk review and Onsite Inspection<br>Activity Performed: The assessment team verified MR version 1.0 dated: 01/11/2023 and final MR version 4.0 dated 01/05/2024/19/, with GS4GG/PDD/14/</td></tr>
<tr><td>Findings</td><td>No finding raised in this section.</td></tr>
<tr><td>Conclusions</td><td>Details of ex-ante parameters
<table>
<tr><th>Parameter</th><th>Unit</th><th>Description</th><th>Value</th></tr>
<tr><td>$EF_{OM, y}$</td><td>$tCO_2e$/ MWh</td><td>Operating Margin $CO_2$ emission factor in year y</td><td>0.9522</td></tr>
<tr><td>$EF_{BM, y}$</td><td>$tCO_2e$/ MWh</td><td>Build Margin $CO_2$ emission factor in year y</td><td>0.8653</td></tr>
<tr><td>$EF_{CM, y}$</td><td>$tCO_2e$/ MWh</td><td>Combined Margin $CO_2$ emission factor in year y</td><td>0.9305</td></tr>
</table>
<table>
<tr><th>Parameter</th><th>Unit</th></tr>
<tr><td>$EF_{OM, y}$</td><td>Calculated as the last 3 year (2018-19. 2019-20 and 2020-21) generation-weighted average, sourced from Baseline $CO_2$ Emission Database, Version 17.0, October 2021 published by Central Electricity Authority (CEA), Government of India</td></tr>
<tr><td>$EF_{BM, y}$</td><td>Baseline $CO_2$ Emission Database, Version 17.0. Oct 2021 published by Central Electricity Authority (CEA), Government of India</td></tr>
</table></td></tr>
</table>

| | |
|---|---|
| | $EF_{CM, y}$ — Calculated as the weighted average of the operating margin (0.75) & build margin (0.25) values, sourced from Baseline CO2 Emission Database, Version 17.0 , Oct 2021 published by Central Electricity Authority (CEA), Government of India<br>Verification is done in accordance with the registered PDD and applied methodology ACM0002 Version 20.0 /12/.<br>The values are obtained from the $CO_2$ Baseline Database for Indian Power Sector" version 17.0, Oct, 2021 /13/ published by the Central Electricity Authority, Ministry of Power, Government of India as mentioned in MR /19/ and verified as per registered PDD /14/.<br>Assessment Team has cross verified the CEA database /13/ and confirmed the same with registered PD, hence the above ex-ante parameters and their values are in-line with the registered PDD. |

### 3.4.2.2 Data and Parameters monitored

| | |
|---|---|
| **Verification Means** | **Means:** During desk review and Onsite Inspection<br>**Activity Performed:** The assessment team verified MR version 1.0 dated: 01/11/2023 and final MR version 4.0 dated 01/05/2024/19/, PDD /14/, and other supporting documents i.e., Calibration Records /31/, JMRs /27/, Invoices /28/, Employment Records /25/, Training Records /24/ for the current Monitoring Period. |
| **Findings** | CL 01- was raised and was further closed successfully, please refer Section 06 for detailed analysis of the finding raised. |
| **Conclusions** | Details of monitored parameter (Achieved During Current Monitoring Period) |

| Parameters | Source | Value Applied | Purpose of Data |
|---|---|---|---|
| $EG_{PJy}$ | Monthly joint meter reading report/24/. | 130,587.6 MWh | To Monitor the SDG 7 Indicator |
| $ER_y$ | The baseline emissions are the product of electrical energy baseline $ER_{,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor. | 121,511 $tCO_{2e}$ | To Monitor the SDG 13 Indicator |
| Quantitative employment, | Training Records (HSE & HR) | 03 Employees newly hired during current monitoring period. | To Monitor the SDG 8 Indicator |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | Quality of employment<br><br>Income generation | Salary Slip of the project employees. | (Total Employees: 36)<br><br>35<br>Trainings<br><br>Income Generation - As per minimum wages notification, 2022 by Department of Labour Rajasthan dated 20/07/2022[11], the workers in Rajasthan under schedule – I, s. no. 24 are required to be paid minimum wages along with minimum wages notification, 2023 by Department of Labour Rajasthan dated 04/09/2023[12], the workers in Rajasthan under schedule – I, s. no. 24 are paid wages as mentioned below:<br>• Unskilled Workers – 259 INR per day or 6734 INR per month<br>• Semi-skilled Workers - 271 INR per day or 7046 INR per month<br>• Skilled Workers – 283 INR per day or 7358 INR per month<br>• Highly Skilled Workers - 333 INR per day or 8658 INR per month | | |

[11] https://labour.rajasthan.gov.in/notification.aspx
[12] https://labour.rajasthan.gov.in/notification.aspx

**SDG Indicator 7.2: Affordable and Clean Energy**
$EG_{PJy:}$ Quantity of net electricity supplied by the project plant/unit to the grid in year y (MWh)

The parameter is derived by calculating the variance between the export and import values, which are measured using a bi-directional meter. Additionally, this parameter aligns with the recorded net generation values documented in the State Energy Account on a monthly basis by SEB. Furthermore, this parameter is an integral part of the invoices submitted by NTPC to JDVVNL and RSDCL and is consistent with what was outlined in the registered Project Design Document (PDD).
The assessment team meticulously reviewed the value of net electricity exported, as calculated from the State Electricity Account (SEA) records, and confirmed its accuracy. The net electricity supplied to the grid matched the details provided in the invoice statements and was deemed correct. **Hence, the value of 130,587.6 MWh,** as specified in MR version 02 dated 03/01/2024 and the emission sheet version 02 dated 03/01/2024, is validated as accurate and complies with the stipulations outlined in Para 364 and 395 (e) of the "CDM validation and verification standard for project activities, Version 03.0."

| **Monitoring Period (Vintage)** | **Values (MWh)** |
|---|---|
| 06/11/2022 to 31/12/2022 | 20,416.5 |
| 01/01/2023 to 30/09/2023 | 110,171.1 |
| **Total** | **130,587.6** |

Additionally, the assessment team scrutinized the Joint Monitoring Reports (JMRs) issued by the State Utility. They also cross-checked the power exported values with the invoices submitted by the Project Developer (PD) and found them to be in harmony with the JMRs issued. Calibration of the meter is conducted at five-year intervals, and the most recent calibration is still applicable. This calibration procedure aligns with the provisions set forth in Para 369 and 370 of the "CDM validation and verification standard for project activities, Version 03.0."
The Energy meters used to record the values of export/import are of accuracy class 0.2s are used to measure the net electricity generated. The assessment Team physically inspected the energy meters installed at site and verified the Serial numbers and confirmed the authenticity of the meter details.

The meters are calibrated **Once in every five year** and the calibration of the meters are verified from calibration certificates provided /31/. During physical inspection of the site, the assessment team also interviewed the site in-charge an confirmed the calibration details. It is to note that calibration is under the purview of state electricity board i.e., Jodhpur Vidhyut Vitran Nigam Limited (JDVVNL) and Rajasthan Solarpark Development Company Limited (RSDCL).

Since 100% data was verified, the assessment team can ascertain that the values for the emission reductions calculated are accurate.
**SDG Indicator SDG 8.5.1: Decent Work and Economic Growth**

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

- Regarding quantitative employment and income generation, this involves tracking the number of project employees, their gender, employment type (permanent/temporary), age, disability status, and the salaries paid to them. The parameter is determined by the total number of individuals employed directly as a result of the project's activities, and it takes into account the improved salary provided to these employees, during the current monitoring period.

- In this specific case, the data reveals that there were a total of 3 employees during this monitoring period. This workforce consisted of 03 semi-skilled employees in permanent positions.

| Monitoring Period (Vintage) | Total | Skilled | Semi-skilled | Unskilled |
|---|---|---|---|---|
| 06/11/2022 to 31/12/2022 | 01 | 0 | 1 | 0 |
| 01/01/2023 to 30/09/2023 | 02 | 0 | 2 | 0 |

- Further to add more to the impact this project activity has over SDG 08 has is that the number of jobs mentioned above i.e., employees hired during current monitoring period are permanent and full time in nature totalling 36 employees that are working at the plant since the date of commissioning. *(Please note that total employee number is subject to change since PD has no control over if any employee resigns during their period at the plant. The total number of employees might differ if compared with last monitoring period.)*
- The number of employees hired during the current monitoring period is 03 required to be stated as per GS4GG standard guidelines. However, there are a total of 36 employees working in the plant during the current Monitoring Period. Additional short-term services create temporary jobs. Females are not employed at the site until now. Females are employed at the Head and corporates offices.
- VVB assessed the salary/per day wage of all the employees is disbursed as per state labour laws or not and for that VVB has raised clarification/correction requests during the verification assessment and technical review stage and following was concluded.
- The project developer goes beyond mere compliance with minimum wage regulations, demonstrating a commitment to the principles of Sustainable Development Goal 8 (SDG 08) and Gold Standard requirements. By ensuring that workers receive wages higher than the prescribed minimums, the developer not only meets legal obligations but also prioritizes fair compensation and decent work conditions. This approach contributes to the broader goal of promoting sustainable economic growth, full and productive employment, and decent work for all, as outlined by SDG 08. Additionally, adherence to Gold Standard requirements signifies a commitment to environmentally and socially responsible project

development, which includes fair treatment of workers. Thus, the developer's actions not only benefit the workers directly but also contribute positively to the overall sustainability and ethical standards of the solar plant implementation.

- The project developer ensures that all workers are paid above the minimum wage requirements set by the Department of Labour Rajasthan *(https://labour.rajasthan.gov.in/notification.aspx)*.
- As per the Minimum Wages Act, 2022 notification Dated: 28/06/2022, the minimum wages are as follows:
  (a) Unskilled Workers: 259 INR per day or 6734 INR per month
  (b) Semi-skilled Workers: 271 INR per day or 7046 INR per month
  (c) Skilled Workers: 283 INR per day or 7358 INR per month
  (d) Highly Skilled Workers: 333 INR per day or 8658 INR per month
- As per minimum wages notification, 2023 by Department of Labour Rajasthan dated 04/09/2023, the workers in Rajasthan under schedule – I, s. no. 24 are required to be paid minimum wages

  a) Unskilled Workers - 285 INR per day or 7410 INR per month
  b) Semi-skilled Workers - 297 INR per day or 7722 INR per month
  c) Skilled Workers – 309 INR per day or 8034 INR per month
  d) Highly Skilled Workers - 359 INR per day or 9334 INR per month

- However, the developer pays workers even more, with rates of
  (a) 384 INR/day for unskilled workers
  (b) 423 INR/day for semi-skilled workers
  (c) 486 INR/day for skilled workers
  (d) 612 INR/day for highly skilled workers.

It is to note the salary received by the Highly skilled/skilled/semi-skilled/unskilled employees is differential in nature and due to confidentiality issues the salary cannot be disclosed, however to establish an overall comparison PD has disclosed the per day wage of each type of employee which is transparently higher than as specified by the state government mandate. This commitment exceeds the minimum wage requirements and reflects the developer's adherence to Sustainable Development Goal 8 (SDG 08) requirements and Gold Standard guidelines. The assessment team found this information acceptable and verified it using the salary slips, Training Attendance sheets & Employee Records submitted along with interview/focussed group discussion with site personnels/stakeholders while physically inspecting the project implemented site.

During interviews and focused group discussions with site personnel, it was also verified that the total number of workers at the plant is determined based on the daily log available on-site. This log includes information on the number of men and women employed, ensuring equal pay for work of equal value without any gender discrimination. The

| | |
|---|---|
| | employment records detail the type of employment (temporary/permanent, skilled/unskilled) and guarantee that all workers receive equal pay for the same work, regardless of gender. Employment generation encompasses both project implementation and Operation and Maintenance phases, with a focus on creating sustainable, ongoing employment opportunities. This commitment to fair employment practices was confirmed through site visits and discussions with project personnel.<br><br>**SDG Indicator 13.2.1: Climate Action**<br>Urgent measures must be taken to address the challenges posed by climate change and its consequences on consumption.<br>In terms of air quality, the reduction in carbon dioxide ($CO_2$) emissions resulting from the implementation of the project activity is measured in $tCO_2e$ (metric tons of $CO_2$ equivalent). This parameter is computed by multiplying the baseline electrical energy ($EG_{PJ,y}$) expressed in MWh (megawatt-hours) of electricity generated by the renewable power unit by an appropriate emission factor. The calculation is clearly presented in the Emission Reduction Sheet, and it indicates that the emission reduction achieved during the current monitoring period is **121,695 $tCO_2e$**.<br><br>**Monitoring Period (Vintage)** / **Values (GS-VERs)**<br>06/11/2022 to 31/12/2022 — 18,997<br>01/01/2023 to 30/09/2023 — 102,514<br>**Total** — **121,511 (Vintage wise Roundown)**<br><br>The assessment team has reviewed this information and confirmed its accuracy. Consequently, the emission reduction calculation is considered correct and in compliance with the necessary standards |

#### 3.4.2.3 Implementation of Sampling Plan

| | |
|---|---|
| **Verification Means** | N/A |
| **Findings** | N/A |
| **Conclusions** | N/A |

### 3.4.3 Compliance with the calibration frequency requirements for measuring instruments

| | |
|---|---|
| **Verification Means** | **Means:** During desk review and Onsite Inspection<br>**Activity Performed:** The assessment team verified MR version 1.0 dated: 01/11/2023 and final MR version 4.0 dated 01/05/2024//19/, PDD /14/, and other supporting documents i.e., Calibration Records /31/ applicable for the current Monitoring Period. |
| **Findings** | CL 01- was raised and was further closed successfully, please refer Section 06 for detailed analysis of the finding raised. |
| **Conclusions** | Verification is done in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. |

The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.
Calibration is performed ***once in five years*** as per registered PDD /14/ and PPA /30/. Calibration frequency was cross verified via calibration certificates and was found to be in line with the registered PDD /14/ and PPA /30/.
Calibration is conducted by a NABL accredited Laboratory under the purview of State Electricity Board and Calibration records are maintained at the plant. The data is cross-verified against values of sold electricity in the joint meter reading statement issued by the Jodhpur Vidhyut Vitran Nigam Limited (JDVVNL) and Rajasthan Solarpark Development Company Limited (RSDCL). The meter is in control and supervision of JDVVNL and RSDCL and are calibrated only as and when JDVVNL desires.
Calibration is performed by an NABL accredited Laboratory i.e., Darsh Calibration Private Limited with Certificate Number: CC-2070 /31/
The metering system comprises of main and check meter. In the event that the main metering system is not in service due to maintenance, repair or testing, the reading is obtained from the check meter.
The calibration of energy meters installed at all plant sites are applicable for the current monitoring period. For 70 MW solar plant connected to 220kV pooling substation (GSS – II) at Bhadla Village the due date of calibration was 12/03/2024 however the energy meters got calibrated on 13/03/2023, hence there is no delay in calibration and there is no requirement of application of error factors. This was confirmed by VVB during onsite assessment while inspecting energy meters and cross-verifying the calibration certificates. /31/

**Calibration Details of meters:**

1. **For 70 MW solar plant connected to Bhadla Substation:**

| Meter | Serial Number | Type | Make | Model | Accuracy Class | Date of calibration |
|---|---|---|---|---|---|---|
| Main Meter | 16195106 | 3phase 4wire | L&T | ER300P | 0.2s | 13/03/2023 |
| Check meter | 16195107 | 3phase 4wire | L&T | ER300P | 0.2s | 13/03/2023 |
| Standby meter | 16195098 | 3phase 4wire | L&T | ER300P | 0.2s | 13/03/2023 |

During the verification assessment of project activity, accuracy of all metering equipment's has been checked and found appropriate by assessment team during onsite visit/35/. The installation and working conditions of the meters were checked during the site inspection/38/ and were found to be satisfactory as compared to the provision of calibration/testing frequency, prescribed under the GS4GG/PDD/14/.

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

| | |
|---|---|
| | VVB's Opinion:<br>The VVB has reviewed the two meter calibration dates provided in the project documentation. The VVB confirms that the project has consistently followed the meter calibration requirements outlined in the registered GS PDD, which align with the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006. VVB confirmed the same during the onsite visit to the project implemented site by physically inspecting the energy meters installed at the 132/220 KV RSDCL GSS – II pooling station and also by cross-checking the calibration certificates provided by the PD. The CEA regulations have remained unchanged since the project's inception. The inclusion of the 2021 and 2023 calibration dates demonstrates the project developer's proactive approach to ensuring data accuracy. By voluntarily calibrating the meters ahead of the 5-year regulatory requirement, the project has taken steps to enhance the precision of the measured data, exceeding the minimum compliance standards. This conservative approach to meter calibration is viewed positively by the VVB, as it provides an extra level of rigor and reliability for the energy generation data being monitored and reported. The VVB is satisfied that the multiple calibration dates are justified and in line with best practices for effective monitoring under the Gold Standard framework.<br><br>If local/national standards or the manufacturer's specifications are not available, international standards shall be used but there are national standards (CEA guidelines) available so national standards is followed. PP has considered CEA order dated 17-March-2006; which prescribes under the para 18(b) that "all the meters shall be tested once in five years." Thus, validity of the calibration is considered for five years. Hence the calibration frequency in registered GS4GG/PDD/14/ the frequency is once in 05 years. Which is deemed acceptable to VKU. |

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

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

| | |
|---|---|
| **Verification Means** | **Means:** During desk review and Onsite Inspection<br>**Activity Performed:** The assessment team verified MR version 1.0 dated: 01/11/2023 and final MR version 4.0 dated 01/05/2024//19/, ER Sheet /20/ with registered GS4GG/PDD/14/, and other supporting documents i.e., PPA /30/ & Validation Report/15/ |
| **Findings** | No finding raised in this section. |
| **Conclusions** | Verification is done in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.<br><br>**SDG 13**- The baseline emissions are the product of electrical energy baseline $EG_{PJ,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor.<br><br>$BE_y = EG_{PJ,y} * EF_{grid,CM,y}$ = **101,836 $tCO_2$** |

| | |
|---|---|
| | **Estimated Emission Reduction as in GS PD for the equivalent period of the current Monitoring period, 06-November-2022 to 30-September-2023 (Inclusive of both the days):** |
| | Monitoring Period Start Date: 06-November-2022 |
| | Monitoring Period End Date: 30-September-2023 |
| | Days in Current Monitoring period: 329 Days |
| | Annual GS-VERs as per GS PDD: 112,980 |
| | Estimated Emission Reduction as in GS-VERs PDD for the equivalent period of the current Monitoring period: = (Annual Estimated GHG emission reductions as per revised GS PD/Total days in a year) *days in current monitoring period<br>= (112,980/365) * 329 = 101,836 (round down) ($tCO_2e$) |
| | **SDG 7-** The Values estimated in ex-ante calculation of approved PDD for this monitoring period is **109,444 MWh.**<br><br>**SDG 8-** Total 01 training was to be conducted and 10 employees were to be hired as per ex-ante values estimated in ex-ante calculation of approved PDD for this monitoring period.<br><br>The Data given in the MR /14/ section E.1 and ER sheet was verified via Registered PDD /13/ during desk review stage and was found to be correct and in compliance with ISO 14064-2 clause 6.4 and 6.5 /9/. |

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

| | |
|---|---|
| **Verification Means** | **Means:** During desk review and Onsite Inspection<br>**Activity Performed:** The assessment team verified MR version 1.0 dated: 01/11/2023 and final MR version 4.0 dated 01/05/2024//19/, ER Sheet /20/ with registered GS4GG/PDD/14/, and other supporting documents i.e., Validation Report/15/ JMRs /27/, Invoices /28/, Employment Generation data /25/, Training Records /24/ for the current Monitoring Period. |
| **Findings** | CAR-02, was raised and was further closed successfully, please refer Section 06 for detailed analysis of the finding raised. |
| **Conclusions** | Verification is done in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.<br>Monitored parameters for the project is-<br><br>**SDG 13:**<br>**Baseline emissions:**<br>It includes only $CO_2$ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The |

methodology assumes[13] that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:

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

Where;

BEy = Baseline emissions in year y, ($tCO_2e/yr$)

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

$EF_{grid,CM,y}$ = Combined margin $CO_2e$ emission factor for grid connected power generation in year y

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

The value of emission reductions is vintage wise rounded down thus maintaining a conservative approach while estimating GS-VERs for current monitoring period.

**Project Emissions:**

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

"For most renewable energy power generation project activities, $PE_y = 0$.

| Monitoring Period (Vintage) | Values (MWh) | Emission factor ($tCO_2/MWh$) | Values (GS-VERs) |
|---|---|---|---|
| 06/11/2022 to 31/12/2022 | 20,416.5 | 0.9305 | 18,997 |
| 01/01/2023 to 30/09/2023 | 110,171.1 | 0.9305 | 102,514 |
| **Total** | **130,587.6** | **0.9305** | **121,511** |

However, some project activities may involve project emissions that can be significant. These emissions shall be accounted as project emissions by using the following equation:

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

Where:

$PE_y$ - Project emissions in year y ($tCO_2e/yr$)

$PE_{FF,y}$ - Project emissions from fossil fuel consumption in year y ($tCO_2/yr$)

$PE_{GP,y}$ - Project emissions from the operation of dry, flash steam or binary geothermal power plants in year y ($tCO_2e/yr$)

$PE_{HP,y}$ - Project emissions from water reservoirs of hydro power plants in year y ($t\ CO_2e/yr$)

"As the project activity is the installation of a new grid-connected Solar power plant/unit and does not involve any project emissions from fossil fuel, operation of dry, flash steam or binary geothermal power plants, and

[13] As per para 39. Of section 5.5 "Baseline emissions" of the Methodology ACM0002 v20.0

from water reservoirs of hydro power plants. Therefore $PE_{FF, y}$, $PE_{GP, y}$, $PE_{HP, y}$ is equal to zero and thus,
**$PE_y$ = 0.**

**Leakage Emissions:**
As per para 53 of section 5.6 of the approved consolidated Methodology ACM0002 (Version 20.0)/12/:
No leakage emissions are considered in the project activity. The main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g., extraction, processing, and transport). Since the emissions sources are small, it is neglected, thus,
**$LE_y$ = 0**.

| Year | Baseline emissions or removals ($tCO_2e$) | Project emissions or removals ($tCO_2e$) | Leakage emissions ($tCO_2e$) | Net GHG emission reductions or removals ($tCO_2e$) |
|---|---|---|---|---|
| **06-November-2022 to 30-September-2023** | **121,511** | 0 | 0 | **121,511** |

**SDG 07:**
**$EG_{PJ,y}$:** During current monitoring period, the project has generated **130,587.6 MWh** affordable and clean energy.

**SDG 08:**
**Quality of Employment -**
Quantitative employment and income generation **- 3 employees**[14]

| Employee Type | Per Day wage as per State (Rajasthan State Labour Laws) Year 2022 | Per Day wage as per State (Rajasthan State Labour Laws) Year 2023 | Wage received by Employees at site |
|---|---|---|---|
| Unskilled | 259 | 285 | 384 |
| Semi-Skilled | 271 | 297 | 423 |
| Skilled | 283 | 309 | 486 |
| Highly Skilled | 333 | 359 | 612 |

03 number of employees are only the number of employees hired during the current monitoring period. However, there are a total of 36 employees working in the plant during the current Monitoring Period.

**Training of Staff: During this monitoring period a total of 35 trainings were conducted.**

| Monitoring Period (Vintage) | Trainings |
|---|---|

[14] 03 new employees were hired in this monitoring period.

| | |
|---|---|
| 06/11/2022 to 31/12/2022 | 06 |
| 01/01/2023 to 30/09/2023 | 29 |
| Total | 35 |

These trainings are conducted together with the technology supplier, the Project organize training for the staff on the technology and the monitoring of the plant operation, and the emergency and safety procedures.

The electricity generated was verified via JMRs /27/ and crosschecked with the invoices /28/ provided by the PD and the employment generated was checked via employment records /25/, training records /24/ and salary slips of employees and Plant record /25/Since 100% data was verified, the assessment team can ascertain that the values for the emission reductions calculated are accurate and in line with ISO 14064- 2 clause 6.7 /9/.

### 3.5.3 Calculation of Leakage

| | |
|---|---|
| **Verification Means** | **Means:** During desk review and Onsite Inspection<br>**Activity Performed:** The assessment team verified MR version 1.0 dated: 31/10/2023 and final MR version 4.0 dated 01/05/2024//19/, ER Sheet /20/ with registered GS4GG/PDD/14/, and other supporting evidences/applied methodology i.e., ACM0002 Methodology version 20.0/12/ |
| **Findings** | No findings raised. |
| **Conclusions** | Verification is done in accordance with the registered PDD /14/ and applied methodology ACM0002 Version 20.0 /12/.<br>**Leakage ($LE_y$) = 0**<br>As per Paragraph 53 of the consolidated methodology ACM0002 Version 20 /12/, there is no leakage emission considered through the renewable project electricity generation. |

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

| SDG and SDG Impact | Baseline Estimate | Project Estimate | Net Benefit | Conclusion |
|---|---|---|---|---|
| **13- Climate Action** | 121,511 $tCO_2e$ | 0 | 121,511 $tCO_2e$ | Assessment team conducted desk review and an on-site inspection and verified the data reported in the ER sheet /20/ and MR /19/ for current monitoring period via JMRs /27/ and invoices /28/ raised monthly and found it to be correct. |
| **7- Affordable and Clean** | 0 | 130,587.6 MWh | 130,587.6 MWh | Assessment team verified Net Electricity generated in the current monitoring period via JMRs /27/ that were further crosschecked via invoices /28/ and DGRs |

| | | | | |
|---|---|---|---|---|
| | | | | /29/ present onsite and found it to be correct. |
| **8- Decent Work and Economic Growth** | **0** | Total 10 people employed and 1 training conducted Average Salary (INR/Month) | Total people Employed**: 03**<br><br>Training Conducted: **35**<br><br>Total 03 new people employed, 35 training conducted and The income to all the workers is made better than the minimum wage requirements Year 2022 & Year 2023 | Assessment team verified total employment generated and trainings conducted in the current monitoring period via employment records, salary slips /25/ of employees and training records /24/ and were found to be correct. |

### 3.5.5 Comparison of actual emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

| SDG and SDG Impact | Values estimated in ex ante calculation of approved PDD | Actual values achieved during this monitoring period | Conclusion |
|---|---|---|---|
| **13- Climate Action** | 112,980 $tCO_2$ | 121,511 $tCO_2e$ | Assessment team conducted desk review and an on-site inspection and verified the Net Electricity generation reported in the ER sheet /20/ and MR /19/ for current monitoring period via JMRs /27/ and invoices /28/ raised monthly. Total employment generated and trainings conducted in the current monitoring period were verified via employment records, salary slips /25/ of employees and training records /24/ and were found to be correct. |
| **7- Affordable and Clean** | 121,420 MWh | 130,587.6 MWh | |
| **8- Decent Work and Economic Growth** | 1 Trainings<br>10 employees | 35 Trainings<br>3 employees<br>The income to all the workers is made better than the minimum wage requirements Year 2022 & 2023 | |

### 3.5.6 Remarks on difference from estimate value in registered PDD

<table>
<tr><td>Verification Means</td><td>Means: During desk review and Onsite Inspection<br>Activity Performed: The assessment team verified MR version 1.0 dated: 01/11 /2023 and final MR version 4.0 dated 01/05/2024//19/, ER Sheet /20/ with registered GS4GG/PDD/14/.</td></tr>
<tr><td>Findings</td><td>CAR-02, was raised and was further closed successfully, please refer Section 06 for detailed analysis of the finding raised.</td></tr>
<tr><td>Conclusions</td><td>The ex-ante estimates value of the emission reductions for the monitoring period as per the registered PDD /14/, is 112,980 tCO2e and the actual emission reductions achieved for the monitoring period is 121,511 $tCO_2e$.<br><br>The table below defines the estimated and achieved values of the parameters:<br><br>
<table>
<tr><th>SDG Indicator</th><th>SDG</th><th>Values Estimated Annually</th><th>Values Estimated for current MP</th><th>Values achieved for Current MP</th><th>Unit</th></tr>
<tr><td>Affordable and Clean Energy</td><td>SDG 7</td><td>121,420</td><td>109,444</td><td>130,587.6</td><td>MWh</td></tr>
<tr><td rowspan="3">Decent Work and Economic Growth</td><td rowspan="3">SDG 8</td><td>10</td><td>10</td><td>3</td><td>Number of employees</td></tr>
<tr><td>01</td><td>01</td><td>35</td><td>Number of Trainings</td></tr>
<tr><td>-</td><td>-</td><td>The income to all the workers is made better than the minimum wage requirements: 384 INR/day (unskilled), 423 INR/day (semiskilled), 486 INR/day (skilled) and 612 INR/day (highly skilled)</td><td>Income generation</td></tr>
<tr><td>Climate Action</td><td>SDG 13</td><td>112,980</td><td>101,836</td><td>121,511</td><td>$tCO_2e$ per annum</td></tr>
</table>
<br>For SDG 13, Since actual emission reduction is higher than the estimated value by 19.50%<br>This is due to the increase in power output resulting from a higher number of sunshine hours. This suggests that power output is directly related to the amount of sunshine, and that the higher generation observed during the current period.<br><br>This is reflected as higher PLF due to peak season from March to June 2023 during current MP, along with other climatic factors observed which are beyond the control of PD and hence it is acceptable to the verification team. The factor contributing to the rise in emission reduction is the elevated Plant Load Factor (PLF). The Project Design Document (PDD) initially estimated a PLF of 20%. However, the actual PLF achieved during the monitoring period was 23.66%, indicating an 18.31% increase.</td></tr>
</table>

It's noteworthy that the registered PDD includes a Sensitivity breaching value set at a 23.94% increase in PLF. The observed increase in PLF remains well below this breaching value. The enhanced generation is attributed to factors beyond the project participant's control, such as increased sunshine hours and irradiance.
It is essential to highlight that the site, situated in a sand dune area, experiences a notably high distortion rate of the solar panels. Considering these conditions, achieving such a high PLF value in subsequent monitoring periods is deemed highly unrealistic. The assessment team while interviewing the site personnels also discussed about the peak season ahigh generation during the current monitoring period and it was confirmed that project implemented area has a higher sunshine hours that directly impact the electricity generation and thus difference in emission reduction value when compared estimated and actual.

The PLF analysis is as follows:

**(Current Monitoring period i.e., 10 months, 25 days)**

| | |
|---|---|
| **Estimated PLF as per registered PDD** | **20%** |
| **Current monitoring period** | **Actual Generation (MWh)** |
| **Total no. of days**<br>06-Nov-22 \| 30-Sept-23 | **329** |
| **Total generation** | **130,587.6** |
| **Capacity** | **70 MW (AC)** |
| **Actual PLF** | **23.63%** |
| **Percentage Variation in PLF with respect to Registered PDD** | **18.13%** |
| **With breaching value of Benchmark** | **23.94%,** |

**PLF Comparison for last 03 years:**

| **Yearly PLF Data (Last 3 Years)** | | | | | |
|---|---|---|---|---|---|
| **Year** | **Start Date** | **End Date** | **Net Generation (MWh)** | **PLF (%)** | **Source** |
| 2020 | 01-Jan-20 | 01-Aug-20 | 88187 | 23.95% | 2nd Monitoring Period |
| 2020 | 02-Aug-20 | 31-Dec-20 | 59055 | | 3rd Monitoring Period |
| 2021 | 01-Jan-21 | 30-Jun-21 | 76867 | 24.07% | 4th Monitoring Period |
| 2021 | 01-Jul-21 | 31-Dec-21 | 70758 | | 5th Monitoring Period |
| 2022 | 01-Jan-22 | 05-Nov-22 | 127493 | 22.27% | 5th Monitoring Period |

| | | | | | |
|---|---|---|---|---|---|
| 2022 | 06-Nov-22 | 31-Dec-22 | 9074 | | 6th Monitoring Period (Current MP) |
| 2023 | 01-Jan-23 | 30-Sep-23 | 110171 | 24.02% | 6th Monitoring Period (Current MP) |

*Above results clearly show that the PLF with breaching value is higher than actual PLF hence project is additional. For further PLF evaluation, please refer ER sheet to understand the trend of PLF variation during the current monitoring period.

This performance of PLF analysis underscores the project's additionality, demonstrating that it delivers emission reductions beyond what would be achieved through business-as-usual practices. The higher-than-expected emission reductions, despite the high PLF compared to the GS4GG PDD /14/ projection, provide compelling evidence of the project's environmental benefits.

**Higher PLF Justification:** The increase in the Plant Load Factor (PLF) for the monitoring period in question is attributed to favourable climatic conditions beyond the control of the project participant. While it is acknowledged that the project site, being located in a sand dune area, is susceptible to higher distortion rates of solar panels due to dust accumulation, the exceptional solar radiation and aridity of the region have played a significant role in boosting the generation output.

Rajasthan, particularly the Bhadla region, is known for its high solar irradiance and clear sunny days throughout the year. According to the report "Solar Power in India: A Case Study of the Bhadla Solar Power Park" (CENFA, 2024), the extreme aridity of the region contributes to the high solar radiation received. The report states, "The Bhadla region receives an average annual direct normal irradiance (DNI) of around 2,200 kWh/m²/year, making it one of the most promising locations for solar power generation in India."

Despite the challenges posed by dust accumulation and potential panel distortion, the favorable climatic conditions have resulted in increased sunshine hours and higher irradiance levels during the monitoring period. A study by Grantham Institute (2018) notes, "The Thar Desert region, where Bhadla is located, experiences over 300 clear sunny days per year, leading to high levels of solar insolation."

Furthermore, a research paper by Ramachandra et al. (2017) highlights, "The dry and arid climate of the Thar Desert region minimizes the moisture content in the atmosphere, leading to higher levels of direct solar radiation reaching the Earth's surface."

Therefore, the justification provided by the project participant that "the higher generation observed is attributed to more sunshine hours and irradiance, influenced by factors beyond their control," holds valid in the context of the site-specific conditions in Bhadla, Rajasthan. The VVB acknowledges that while panel distortion rates may be higher due to the sand dune location, the exceptional solar resource availability has played a crucial role in achieving the increased PLF, which is well below the breaching value. It is recommended that the project participant continues to implement appropriate mitigation measures to address the panel distortion and dust accumulation challenges, such as regular cleaning and maintenance of the solar panels, while capitalizing on the region's favourable solar resource potential.

**Achieved Emission Reduction is within the breaching limits:** The VVB has thoroughly reviewed the higher ex-post emission reductions achieved during the current monitoring period, which are 19.32% higher than the estimated values in the registered Project Design Document (PDD). The increase is attributed to a higher

| | |
|---|---|
| | Plant Load Factor (PLF) of 23.63%, which is 18.13% higher than the expected PLF of 20% stated in the PDD.<br>The VVB acknowledges that the increase in PLF is well below the breaching value of 23.94% set in the PDD. Furthermore, the project proponent has provided justification that the higher generation is influenced by factors beyond their control, such as increased sunshine hours and irradiance levels in the project region. To address the concern raised regarding the potential impact on additionality due to the higher realized emission reductions, the VVB has cross-checked the updated investment analysis provided by the project proponent. The analysis accurately reflects the actual PLF achieved during the monitoring period (23.63%) as the only variable updated, while keeping all other parameters and assumptions consistent with the validated PDD. The resulting equity Internal Rate of Return (IRR) of 12.46% is well below the benchmark value of 15.28% set during validation, confirming that the project remains additional despite the higher emission reductions. Therefore, the VVB concludes that the higher ex-post emission reductions are justified and do not jeopardize the additionality of the project activity. However, project proponent is closely monitoring the PLF and emission reductions in subsequent monitoring periods.<br><br>The monitoring report provides reason for increase in the actual emission reduction and the same was confirmed by the verification team by cross verifying the records submitted by the PD i.e., JMRs /27/, Invoices /28/ reflecting Higher net generation and PLF /34/ obtained from SCADA installed at the site also further confirmed by interviewing the site personnel regarding the sunshine hours and plant generation in past years in different seasons. Thus, VKU is of opinion that the facts stated by PD is correct and calculations for ER and PLF is done correctly and in line with applied methodology.<br><br>All the data have been made available to the assessment team by PD during site visit/38/ and as supporting evidences which have been monitored as per required monitoring frequency. The means of verification for the values of parameters, used for baseline emission calculation, is described above.<br>The assessment team has checked and confirmed the emission reduction calculations in the spreadsheet and found to be accurate. The monitoring report/19/ is supported by emission reduction spreadsheet/20/. The consistency and formula were verified and found to be accurate.<br>VKU is of the opinion that this method of calculation of emission reductions is accurate and results in conservative estimation of emission reduction and is in line with the applicable GS requirements set out in section 12.13 clause 12.13.2 of GS Standard version 01 and that the verification of the GHG statement was conducted in in accordance with ISO 14064-3; 2019. |

### 3.6 Safeguards Reporting

Since no safeguarding principles were included in the monitoring plan outlined in the registered Gold Standard Project Design Document (PDD), evaluating the relative success or failures, or improvements to proposed mitigation measures in this context is not applicable. and in compliance with GS4GG Safeguarding Principles Requirement v2.1 dated: 29/06/2023.

## 3.7 Stakeholder inputs and legal Disputes

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

During desk review, Assessment team checked the procedures mentioned in MR and during onsite inspection cross verified the same via interviews of site personnel and stakeholders /38/ that- as a part of continual improvement process- PD has kept visitor register cum grievance register at the 70 MW (AC) solar plant site which is accessible to stakeholders to provide their feedback on the project. It is placed appropriately at a publicly accessible location where local stakeholders can provide their feedback. This location is also conducive to continuous and regular checks for stakeholder comments. The grievance register is being continuously monitored and addressed through the grievances cell on regular basis.

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

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

During onsite inspection Assessment Team verified visitor register cum grievance register /26/ placed on site and conducted personnel interviews /38/ and concluded that there was no negative feedback logged during the current monitoring period. The stakeholders interviewed are listed in Table no 12.2 of this report.

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

Assessment Team confirms that the given GS4GG project "70 MW Solar power plant by Fortum FinnSurya Energy Private Ltd. (EKIESL-CDM-APRIL-16-01)" is in compliance with the Host Country "India" legal environmental, ecological and social regulations as per requirements mentioned in section 7.11 at time of validation for design certification for standalone project activity of validation and verification standard v1.0 /5/ and there is no legal challenge that has arisen claiming a project is not in compliance with regulation, during certification process.

## 3.8 Quality of evidence to determine emission reductions

As per the verification of ER calculation process, assessment team confirmed that all the parameters required for determination of emission reductions has been included in the Monitoring report version 4.0 dated 01/05/2024/ and corresponding ER calculation spread-sheets Version 03 /20/ dated 01/05/2024 and are consistent with the applied methodology ACM0002 Version 20.0 /12/ and the monitoring plan contained in the registered PDD /14/. The parameters used are completely monitored as per the registered PDD /14/ in this monitoring period.

During desk review and onsite inspection, assessment team verified the reported ERs with the help of supporting documents e.g., JMRs, Invoices and conducted personnel interviews to check sufficiency of data and its aggregation. No significant, lack of evidence and missing data were detected during verification. Hence, the verification team confirms that the monitoring plan ensures required management of the monitoring system to ensure the quality of the monitored data. All internal data are subjected to QA/QC measures. The verification process for the same has been clearly described in above section of the report.

Emission reductions is calculated by the "Quantity of net electricity supplied from the project (solar) plant/unit to the grid in year y", $EG_{facility,y}$ (MWh) (SDG Indicator 7). This parameter is monitored through the reading of Energy meters installed. The meters have accuracy of class 0.2s. The electricity generated was checked via JMRs /27/ and were crosschecked with records of electricity sale (e.g., sales receipt/Invoices) /28/. Calibration of all the meters undertaken once in every five years as per PPA. On site personnel interview /38/ with the site personnel of the project activity confirms that the necessary QA/QC procedures are in place. Data management system is effective and reliable for the net electricity

supplied by the project plant/unit to the grid in year y. Hence assessment can conclude that the data and its management is in compliance with GS4GG validation/ verification standard /5/

### 3.9 Management system and quality assurance

The final verification report passed a technical review and completeness check/ Quality check before being submitted to the client for forward submission to GS.
A technical reviewer qualified in accordance with VKU certification competency form which VKU.F8A. Competency Evaluation of Personnel (Internal Document) for validation and verification of GHG projects performed the technical review.
The comments raised during the technical review stage is thoroughly addressed by the assessment team. After the comments raised during this stage is successfully addressed, the Final verification report undergo VKU's Completeness/Quality Check before issuance.

### 3.10 Verification Assessment

All the data have been made available to the assessment team by PP during site visit/xx/ and as supporting evidences during verification assessment which have been monitored as per required monitoring frequency. The means of verification for the values of parameters, used for baseline emission calculation, is described above in the report.
The verification team attests to correctness of the formulas and methodologies used to compute baseline emissions as per GS4GG Validation and Verification Standard V1.0 /5/. Applied default values, emission factors, and assumptions in the calculations are all reasonable. Verification team attests to the correctness of formulas and methodologies used in calculation of baseline emissions, assumptions, emission factors and default values applied in the calculations are justified.

**SDG Indicators during this monitoring period 06/11/2022 – 30/09/2023 is:**

**SDG 13-** Actual emission reduction achieved is **121,511 $tCO_2e$** calculated by multiplying the unit of MWh produced by an emission factor. The value of emission factor is verified from the PDD /14/ and is calculated as per "Tool to calculate the emission factor for an electricity system," /18/. The data is obtained from "$CO_2$ Baseline Database for Indian Power Sector" version 15.0, /13/ published by the Central Electricity Authority, Ministry of Power, Government of India.

**SDG 7-** Amount of net electricity generated is **130,587.6 MWh**. Value calculated was verified via JMRs /27/ and was further cross verified by Invoices /28/.

**SDG 8-** Employment generated **03** verified via employment records and salary slips /25/ and **35 trainings** /24/ conducted were verified via training records provided by PDD /14/.

**The verification consisted of the following phases:**

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

In this monitoring period, **CAR: Corrective Action :03**, **CL: Clarification Request :02** were raised and resolved. No FAR was raised.

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

### 3.11 Verification Opinion

VKU Certification, contracted by Infinite Environmental Solutions Limited., has performed the independent verification of the emission reductions for the GS Project ID 5519 "70 MW Bhadla Solar power plant by Fortum Finnsurya Energy Private Ltd. (EKIESL-CDM-APRIL-16-01)" for the monitoring period 06/11/2022 to 30/09/2023 as reported in the Monitoring Report, version 4.0 dated 01/05/2024. Site in-charge responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity.

VKU commenced the verification against the baseline and monitoring methodology ACM0002, version 20.0 /12/ the monitoring plan contained in the PDD /14/ and Monitoring Report version 4.0 dated 01/05/2024/19/
VKU Certification confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements. This verification report has been prepared using the latest available template specified by GS4GG registry and complies with the instructions to follow as per GS4GG principle and requirements v1.2 /1/ and GS4GG validation and verification standard v1.0 /5/.
The verification activities were conducted in accordance with VKU Certification's Quality Manual System and SOP 4 of this report and as per the GS4GG validation and verification standard v1.0 /5/.
As a result, it is concluded that the emission reductions from the GS Project Activity ID 5519 "70 MW Bhadla Solar power plant by Fortum FinnSurya Energy Pvt. Ltd. (EKIESL-CDM-APRIL-16-01)" are correctly reported in the Monitoring Report Version 04 dated 01/05/24/19/ and corresponding ER sheet /20/ for the monitoring period 06/11/2022 to 30/09/2023 (including both days) amounted to **121,511 $tCO_2e$.**

VVB opinion on issuance as per the ISO 14064-3, clause 9 which is in compliance with GS4GG principles and requirement v1.2 and GS4GG validation and verification standard v1.0. The VVB hereby issues a resolutely ***positive opinion*** meticulously drafted in strict accordance with ISO 14064-3:2019, /9.2/ Section 09, and the precise provisions of Clause 9.7.1.6 & 9.7.2 of ISO 14065:2020. /9.3/ This opinion stands in full alignment with the exacting requirements delineated in ISO/IEC 17029:2019, Section 9.7./9.4/
Our verification process provides a robust and ***reasonable level of assurance*** regarding the veracity of the reported GHG emission reduction data. This data is devoid of any material misstatements and is steadfastly supported by the evidence furnished by the Project Proponent (PP), comprehensively presented in section 04 of this report.

| VVB Opinion | Conclusion |
|---|---|
| Positive | ☒ |
| Negative | ☐ |
| Adverse Opinion | ☐ |
| Unmodified Opinion | ☒ |
| Modified Opinion | ☐ |

**REFERENCE/DOCUMENTS USED IN THE VERIFICATION**

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

| | | | | | |
|---|---|---|---|---|---|
| | 9.4 | ISO | ISO/IEC 17029:2019: Conformity assessment — General principles and requirements for validation and verification bodies | Dated: 2019-10 | ISO Website |
| 10. | Gold Standard | | Renewable energy activity requirements | Version 1.4 and Dated: 16/08/2021 | Gold Standard Website |
| 11. | Gold Standard | | Gold standard eligible impact quantification methodologies | Version 2.4 and Dated: 22/06/2023 | Gold Standard Website |
| 12. | UNFCCC CDM | | Methodology- ACM0002 "Grid-connected electricity generation from renewable sources | Version 20.0 and Dated: 28/11/2019 | CDM Website |
| 13. | Central Electricity Authority | | $CO_2$ Baseline Database for Indian Power Sector | Version 17 | Central Electricity Authority website |
| 14. | Infinite Environmental Solutions Limited | | GS4GG PDD | Version 03, Dated 04/01/2023 | Gold Standard Website |
| 15. | Gold Standard | | Applus Certification | Design Certification (Validation) Report Version 02 and Dated 03/11/2022 | Gold Standard Website |
| 16. | Gold Standard | | Applus Certification | Registered Previous Verification report Version 02 and Dated 05/09/2023 | Gold Standard Website |
| 17. | UNFCCC CDM | | Tool for the demonstration and assessment of additionality | Version 07 | CDM Website |
| 18. | UNFCCC CDM | | Tool to calculate the emission factor for an electricity system | Version 07 | CDM Website |
| **Reference/Supporting documents submitted by PD to VVB** | | | | | |
| 19. | Infinite Environmental Solutions Limited | | Monitoring Report | Version 01 and Dated 01/11/2023 Version 02 and Dated 03/01/2024 Version 03 & Dated 28/02/2024 Version 4.0 Dated 01/05/2024 | Infinite Environmental Solutions Limited |

| | | | | |
|---|---|---|---|---|
| 20. | Infinite Environmental Solutions Limited | ER Sheet | Version 01 and Dated 01/11/2023<br>Version 02 and Dated 03/01/2024<br>Version 3.0 Dated 01/05/2024 | Infinite Environmental Solutions Limited |
| 21. | Fortum FinnSurya Energy Private Limited | Commissioning Certificate | Commissioning Date: 31-03-2017<br>Capacity: 70 MW (AC) (87.5 MWp) | Infinite Environmental Solutions Limited |
| 22. | Fortum FinnSurya Energy Private Limited | Technical Specifications | Technical Specifications available for current monitoring period from 06-November- 2022 to 30-September-2023 (both days included) | Infinite Environmental Solutions Limited |
| 23. | Fortum FinnSurya Energy Private Limited | Single Line diagram of the project (SLD) | N/A | Infinite Environmental Solutions Limited |
| 24. | Fortum FinnSurya Energy Private Limited | Training Records applicable for current monitoring period from 06-November- 2022 to 30-September-2023 | Training Record are available for current monitoring period from 06-November- 2022 to 30-September-2023 (both days included) | Infinite Environmental Solutions Limited |
| 25. | Fortum FinnSurya Energy Private Limited | Employment records Sample salary slips of personnels applicable for the current monitoring period<br>Plant records for employment generation | Employment records and salary slips of personnels available for current monitoring period from 06-November- 2022 to 30-September-2023 (both days included) | Infinite Environmental Solutions Limited |
| 26. | Fortum FinnSurya Energy Private Limited | Grievance Register Photograph | Grievance Register Photograph available for current monitoring period from 06-November- 2022 to 30-September-2023 (both days included) | Infinite Environmental Solutions Limited |
| 27. | Jd. V.V.N.L (Jodhpur Vidhyut Vitran Nigam Limited) | Joint Meter Reading | Joint Meter Reading available for current monitoring period from 06-November- 2022 to 30-September-2023 (both days included) | Infinite Environmental Solutions Limited |
| 28. | Fortum FinnSurya Energy Private Limited | Invoices | Invoices available for current monitoring period from 06-November- 2022 to 30-September-2023 (both days included) | Infinite Environmental Solutions Limited |
| 29. | Fortum FinnSurya | Daily Generation Records (DGR) | N/A | Infinite Environmental |

| | | | | |
|---|---|---|---|---|
| | Energy Private Limited | | | Solutions Limited |
| 30. | Govt. Entity | Power Purchase Agreement | Signed between Fortum FinnSurya Energy Private Limited & NTPC Dated: 26th April-2016 | Infinite Environmental Solutions Limited |
| 31. | Hi-Tech Meter Laboratory | Calibration Certificates of energy meters installed | Certificate dated: 13/03/2023 Certificate No. – CC2070 | Infinite Environmental Solutions Limited |
| 32. | Fortum FinnSurya Energy Private Limited | Self- Declaration for no double counting | Self- Declaration for no double counting available for current monitoring period from 06-November-2022 to 30-September-2023 (both days included) | Infinite Environmental Solutions Limited |
| 33. | Fortum FinnSurya Energy Private Limited | Plant Breakdown Detail | N/A | Infinite Environmental Solutions Limited |
| 34. | Fortum FinnSurya Energy Private Limited | PLF Details | N/A | Infinite Environmental Solutions Limited |
| **VVB Documents used during Current Verification** | | | | |
| 35. | VKU Certification | Onsite Inspection- Site Photographs | Dated: 07/11/2023 | N/A |
| 36. | N/A | GPS Map Camera: Geotag Photos & Add GPS Location | N/A | N/A |
| 37. | N/A | Google Earth Software | N/A | N/A |
| 38. | VKU Certification | Onsite Personnel and Stakeholders Interview | Dated: 07/11/2023 | N/A |
| 39. | VKU Certification | VKU.F64W.Field Assessment Checklist for Onsite Visit | Dated: 07/11/2023 | N/A |
| 40. | VKU Certification | VKU.F46W. Attendance Sheet of Onsite audit | Dated: 07/11/2023 | N/A |
| 41. | VKU Certification | Risk Assessment | Version 02 Dated 09/11/2023 | N/A |
| 42. | VKU Certification | Audit & Sampling Plan | Dated: 03/11/2023 | N/A |
| 43. | VKU Certification | Evidence Gathering Plan | Dated: 03/11/2023 | N/A |

## 4. Certification Statement

VKU Certification Private Limited (VKU Certification), contracted by Infinite Environmental Solutions Limited , has performed the independent verification of the emission reductions for the GS4GG project activity 5519 "70 MW Bhadla Solar power plant by Fortum Finnsurya Energy Pvt. Ltd. (EKIESL-CDM-APRIL-16-01)" in India for the monitoring period 06/11/2022 to 30/09/2023 (both dates included) as reported in the Monitoring Report Version 04 dated 01/05/2024/19/. The Infinite Environmental Solutions Limited is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity.

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

VKU Certification commenced the verification on the basis of the baseline and monitoring methodology ACM0002 V 20.0 /12/ the monitoring plan contained in the GS-PDD /14/, Monitoring Report Version 04 dated 01/05/2024/19/ as per the methodology described under Section 2 of this report.

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

In our opinion the GHG emissions reductions reported for the project activity for the period 06/11/2022 to 30/09/2023 (both dates included) are fairly stated in the Monitoring Report (final) Version 04 dated 01/05/2024/19/. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology ACM0002 V 20.0 /12/ and the monitoring plan contained in the PDD /14/.

VKU Certification Private Limited is able to certify that the emission reductions from the GS4GG project activity 7572 "70 MW Bhadla Solar power plant by Fortum FinnSurya Energy Pvt. Ltd. (EKIESL-CDM-APRIL-16-01)" in India during the period 06/11/2022 to 30/09/2023 (both dates included) amount to **121,511 $tCO_2e$**.

**Verified and certified emission reductions as per commitment period:**

| Commitment period | Amount |
|---|---|
| Vintage 01: 06/11/2022 to 31/12/2022 | 18,997 $tCO_2e$ |
| Vintage 02: 01/01/2023 to 30/09/2023 | 102,514 $tCO_2e$ |
| From: 06/11/2022 to 30/09/2023 (both dates included) | 121,511 $tCO_2e$ |

VIKAS KUMAR AHARWAL

Digitally signed by VIKAS KUMAR AHARWAL
Date: 2024.06.06 17:00:08 +05'30'

**Dr Vikas Kumar Aharwal** **06/06/2024**

**Founder and Director** Indore, India

VKU Certification Private Limited

## 5. VERIFICATION FINDINGS (CAR/CL/FAR)

CL: Clarification Request_02
CAR: Corrective Action Request_03
FAR: Forward Action Request_00

### Description of Clarification Requests (CLs) raised by VVB:

| **Type** | **Date** | 23-November-2023 |
|---|---|---|
| CL#01 | **Reference** | Section of Verification protocol 01/DR/OSV/AT |
| **Description of the Non-Conformance** | | |
| 1) **In table key project information of MR:**<br>a) PD has not provided the reference weblink of Registered GS Project.<br>b) As per Key Project Information of PDD, Project Representative is Infinite Solutions. Kindly Clarify.<br>c) PD has not provided the reference weblink of methodology of Registered GS Project.<br>2) **In table 1 of MR:** PD to provide evidence for the income generation.<br>3) **In section B.1. of MR:**<br>a) PD has not provided supporting documents for technical specifications.<br>b) PD has not provided the commissioning certificate for verification.<br>c) PD has not provided supporting documents to Assessment team for verification.<br>d) PD to submit the previous verification report.<br>4) **In section C of MR:** PD to submit calibration certificates.<br>5) **In section D.2. of MR:**<br>a) PD has not provided any evidence for employment and income generation.<br>b) PD has not provided sample copy of attendance register. | | |
| **1st Response from PP** | **Date** | 02-January-2024 |
| 1) In table key project information of MR:<br>a) The reference weblink of registered GS project has been mentioned in the footnote 1.<br>b) Project Representative Infinite Solutions is also known as Infinite Environmental Solutions Limited. Therefore, it has been revised as Infinite Environmental Solutions Limited.<br>c) Reference weblink of applied methodology has been mentioned in the footnote.<br>2) The relevant documents for verification of SDG 8 are being submitted to the assessment team along with the responses to DVR findings.<br>3) All the relevant supporting documents such as commissioning certificate, technical specifications, last verification documents, PPA etc are being submitted to the assessment team along with the responses to DVR Findings.<br>4) The calibration certificates of energy meters have been submitted to the assessment team with the DVR responses.<br>5) The sample of salary slips, appointment and the sample of daily attendance log has been submitted to the assessment team. | | |

| 1st Assessment by Audit Team | Status | Closed | Date | 08-January-2024 |
|---|---|---|---|---|

1) **In table key project information of MR:**
   a) PD has provided the reference weblink of Registered GS Project and same has been checked and confirmed. **(Closed)**
   b) PD has updated the Project Representative which is Infinite Solutions Limited and same has been checked and confirmed. **(Closed)**
   c) PD has provided the reference weblink of methodology of Registered GS Project and same has been checked and confirmed. **(Closed)**
2) **In table 1 of MR:** PD has provided the documents for the verification of SDG 8 same has been checked and confirmed. **(Closed)**
3) **In section B.1. of MR:**
   a) PD has provided supporting documents for technical specifications and same has been checked and confirmed. **(Closed)**
   b) PD has provided the commissioning certificate for verification and same has been checked and confirmed. **(Closed)**.
   c) PD has provided supporting documents to Assessment team for verification and same has been checked and confirmed. **(Closed)**
   d) PD to submit the previous verification report and same has been checked and confirmed. **(Closed)**
4) **In section C of MR:** Calibration certificate has been provided by the PD and same has been checked and confirmed. **(Closed)**
5) **In section D.2. of MR:**
   c) PD has provided sample copies for employment and income generation and same has been checked and confirmed. **(Closed)**
   d) PD has provided sample copy of attendance register and same has been checked and confirmed. **(Closed)**

**Hence CL#01 is Successfully closed.**

| Type | Date | 23-February-2024 |
|---|---|---|
| CL#02 | Reference | Section of Verification protocol 01/DR/TR |

**Description of the Non-Conformance**

1) **In section D.2 of MR:**
   a) PD has not specified the total employees working at the plant site.
   b) Prior in this report, it is mentioned that these are the people hired during the current monitoring period, why the same specification not provided in this section.
   c) The number has not been stated.
2) **In section E.2 of MR:** Are 36 the total employees working at the site since the date of commissioning.
3) **In section E.4 of MR:** There is inconsistency in the figures for SDG 08 throughout the MR.
4) **In section E.5 of MR:** SDG 08 data is found to be inconsistent within MR & also with the ER submitted by the PD.
5) **In section E.5 of MR:** What is the sensitivity range defined in the GS PDD.

6) **In section G of MR**: What are the communications methods employed by the PD to establish a ongoing word with the stakeholders. The same has not been addressed in the MR.

| **1st Response from PP** | **Date** | 28-February-2024 |
|---|---|---|

1) In section D.2 of the MR:
   a) The total number of employees during current MP has been updated in the MR.
   b) The justification has been updated under SDG 8 in section D.2 of the MR.
   c) The total number of employees working on the plant has been added in the section D.2
2) There are a total of 36 employees working on the project, out of which 3 new employees are hired by the PD during the current monitoring period. The same has been updated under section E.2 of the MR.
3) The inconsistency in the figures for SDG 8 parameter has been corrected throughout the MR.
4) Values under parameter SDG 8 have been corrected and made in line with the ER Sheet throughout the MR.
5) The sensitivity range defined in the PDD is 23.94% increase in the PLF.
6) As a part of continuous feedback from stakeholders, the grievances register is being placed at site and is being continuously monitored and addressed through the grievances cell on regular basis and maintained in a register at site office.

| **1st Assessment by Audit Team** | **Status** | Closed | **Date** | 09-March-2024 |
|---|---|---|---|---|

**1) In section D.2 of MR:**
   a) Total employees working at the plant site during current monitoring period have been specified and same has been checked and verified. **(Closed)**
   b) PD has provided the required justification under SDG 8 in section D.2 of the monitoring report and same has been checked and confirmed. **(Closed)**
   c) PD has added the total number of employees working on the plant and same has been checked and confirmed. **(Closed)**

**2) In section E.2 of MR:** PD has updated the total number of employees working on the site and 03 new employees are hired during the current monitoring period and same has been checked and confirmed. **(Closed)**

**3) In section E.4 of MR:** The inconsistency in the figures for SDG 8 parameter has been updated throughout the MR and same has been checked and confirmed. **(Closed)**

**4) In section E.5 of MR:** Values under parameter SDG 8 have been updated and same has been checked and confirmed. **(Closed)**.

**5) In section E.5 of MR:** Ssensitivity range has been defined in the PDD and same has been found consistent. **(Closed)**

**6) In section G of MR**: As a part of continuous feedback from stakeholders, the grievances register is being placed at site and is being continuously monitored and addressed through the grievances cell on regular basis and maintained in a register at site office and same has been checked and confirmed. **(Closed)**

**Hence CL#02 is Successfully Closed.**

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

| **Type** | **Date** | 23-November-2023 |
|---|---|---|
| CAR#01 | **Reference** | Section of Verification protocol 01/DR/OSV/AT |

**Description of the Non-Conformance**

1) **In table 1 of MR:** PD has not elaborated the type of employees hired skilled, semiskilled or unskilled.
2) **In section A.1. of MR:**
   a) The value of MWp is found to be inconsistent throughout MR with reference to Section A.1 of PDD. Kindly Clarify.
   b) PD has not specified where this State Rajasthan is located.
3) **In section A.3. of MR:**
   a) During Desk Review Assessment team found that the weblink of version provided by the PD is found inconsistent with the version of methodology provided.
   b) During Desk Review Assessment team found that the weblink of version provided by the PD is found inconsistent with the version of tool provided.
4) **In section B.1. of MR:** PD has not incorporated the single line diagram (SLD) of the project activity to describe the generation of electricity at module level and then transfer to the grid.
5) **In section B.1. of MR:** PD to clarify the term CDM Team mentioned in below chart.

| **1st Response from PP** | **Date** | 02-January-2024 |
|---|---|---|

1) The type of employees hired has been updated in under parameter SDG 8: Decent Work and Economic Growth in section D.2 of the monitoring report.
2) In section A.1. of MR:
   a) Total installed DC capacity of the project is 87.5 MWp since commissioning of the project. The same has been updated throughout the monitoring report.
   b) State Rajasthan is located in host country India, the same has been updated under section A.1 of the monitoring report.
3) In section A.3. of MR
   a. The weblink of version has been revised and made consistent with the version of methodology provided in the MR.
   b. The weblink of version has been revised and made consistent with the version of tools provided in the monitoring report.
4) The single line diagram (SLD) of the project activity to describe the generation of electricity at module level and then transfer to the grid has already been included in section C of the monitoring report.
5) The project activity has been transitioned from CDM to GS4GG and the same monitoring plan has been reflected in the PDD, therefore it mentioned about the CDM Team. The same has been revised in the MR.

| **1st Assessment by Audit Team** | **Status** | Closed | **Date** | 08-January-2024 |
|---|---|---|---|---|

1. **In table 1 of MR:** PD has updated the parameter SDG 8: Decent Work and Economic Growth in MR and same has been checked and confirmed. **(Closed)**

**2. In section A.1. of MR:**

a) PD has updated the value of DC capacity throughout the MR and same has been checked and confirmed. **(Closed)**

b) PD has specified that State Rajasthan is located in India. **(Closed)**

**3) In section A.3. of MR:**

a) PD has revised the weblink of the version of methodology provided in the MR and same have been checked and confirmed**. (Closed)**

b) PD has revised the weblink of the version of tool provided in the MR and same have been checked and confirmed**. (Closed)**

**4) In section B.1. of MR:** PD has incorporated the single line diagram (SLD) of the project activity to describe the generation of electricity at module level and then transfer to the grid. **(Closed)**

**5) In section B.1. of MR:** PD has justified the term CDM team mentioned in the MR that the project activity has been transitioned from CDM to GS4GG and the same monitoring plan has been reflected in the PDD and same has been checked and verified. **(Closed)**

**Hence CAR#01 is Successfully closed.**

| **Type** | **Date** | 23-November-2023 |
|---|---|---|
| CAR#02 | **Reference** | Section of Verification protocol 01/DR/OSV/AT |

**Description of the Non-Conformance**

**1) In section C of MR:**

a) PD has not mentioned about how net electricity is calculated.

b) PD has not specified the SEB referred here.

c) PD has not specified about the cleaning mechanism of the solar panels employed at site to improve the efficiency of the plant. PP to also mention about the frequency, monitoring equipment's, and the authority responsible for the same.

d) PD has not mentioned details about the authority responsible to meter calibration, site where energy meters are located. Also, PD has not specified if the calibration certificates issued to PP have a NABL accreditation.

**2) In section E.2 of MR:** PD to indicate specific clause of applied methodology.

**3) In section E.6. of MR:**

**a)** PD has not indicated about change in net generation of electricity for current monitoring period.

**b)** Project Developer has not shown calculation of PLF for the current monitoring period in the ER sheet and also not shown show comparison between estimated and actual PLF.

c) PD to substantiate the PLF data for 2 years (if available) to the VVB or at least 1-year PLF data prior to this MP to allow assessment team to assess the ER calculations in line with the GS4GG guidelines.

| **1st Response from PP** | **Date** | 02-January-2024 |
|---|---|---|

1) In section C of the MR:
   a) The value of Net energy is directly sourced from the Monthly JMRs which also provides the data on Export and Impot Energy.
   b) SEB stands for State Electricity Board which in this case are Jodhpur Vidhyut Vitran Nigam Limited (JDVVNL) and Rajasthan Solarpark Development Company Limited' (RSDCL).
   c) For better efficiency of the plant Robotic cleaning is used for 60MW capacity and Manual cleaning is used for 10 MW capacity. The same has been updated under section B.1 of the MR under technical specifications.
   d) The meters were calibrated by Darsh Calibrations Private Limited, which is a NABL accredited agency. The location of meters and authority responsible for the same has already been mentioned in section C of the MR under Measurement Methods

2) Section E.2 of the monitoring report has been revised to include the specific section of the applied methodology.

3) In section E.6 of the MR:
   a) The change in net electricity generation of the project has been updated under SDG 7 in section E.6 of the MR.
   b) The calculation of PLF for the current monitoring period and comparison between estimated and actual PLF has been updated in the ER Sheet.
   c) The PLF data for current and last verification has been mentioned in the ER sheet.

| **1st Assessment by Audit Team** | **Status** | Closed | **Date** | 08-January-2024 |
|---|---|---|---|---|

**1) In section C of MR:**
   a) PD has provided the Monthly JMRs which also provides the data on Export and Import Energy and same has been checked and verified. **(Closed)**
   b) PD has specified the SEB in this project which are Jodhpur Vidhyut Vitran Nigam Limited (JDVVNL) and Rajasthan Solarpark Development Company Limited' (RSDCL) and same has been checked and verified. **(Closed)**
   c) PP has specified that the cleaning of 60MW plant is done by robotic cleaning mechanism and cleaning of 10MW plant is done by Manual Cleaning and this has been updated under the section B.1 of MR and same has been checked and verified. **(Closed)**
   d) PD has mentioned details about the authority responsible for meter calibration which is Darsh Calibrations Private Limited, which is a NABL accredited agency. The location of meter has been mentioned under Section C of MR and same has checked and verified. **(Closed)**

**2) In section E.2 of MR:** PD has revised the section to include specific clause of applied methodology and same has been checked and confirmed. **(Closed)**

**3) In section E.6. of MR:**
   a) PD has updated the change in net electricity generation of the project under section E.2 of Monitoring Report. **(Closed)**
   b) Project Developer has updated the calculation of PLF for the current monitoring period and comparison between estimated and actual PLF in the ER Sheet and same has been checked and confirmed. **(Closed)**
   c) PD has mentioned PLF data for current and last verification in the ER Sheet. **(Closed)**

**Hence, CAR#02 is Successfully closed.**

| Type | Date | 23-February-2024 |
|---|---|---|
| CAR#03 | Reference | Section of Verification protocol 01/DR/TR |

**Description of the Non-Conformance**

1) **In table key project information of MR:** Is this crediting period inclusive of both first & last date?
2) **In table 1 of MR:** Are there only unskilled workers working at the plant site?
3) **In section C of MR:**
   a) O & M procedures and entity has not been specified in any section in registered GS PDD or monitoring report.
   b) The statement does not satisfy the requirement regarding the procedures needs to be followed as a part of emergency procedures.
   c) Meter Make is not mentioned here.
   d) Is calibration frequency taken as 05 year in line with any national standards of the country?

| 1st Response from PP | Date | 28- February-2024 |
|---|---|---|

1) The crediting period is inclusive of both first & last date. The same has been updated in the KPI table and throughout the MR.
2) There are skilled, unskilled, semi-skilled and highly skilled workers present in the plant. The daily wage rate for all type of employees has been mentioned throughout the MR.
3) Section C of the MR has been revised to include the following:
   a) O&M Procedure and O&M entity of the project. The O&M of the project is managed by the PP itself i.e. Fortum FinnSurya Energy Private Limited.
   b) The section has been revised to include the information regarding emergency preparedness.
   c) Meter make has been mentioned.
   d) The 5-year calibration frequency is in line with the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006.

| 1st Assessment by Audit Team | Status | Closed | Date | 09-March-2024 |
|---|---|---|---|---|

1) **In table key project information of MR:** The crediting period is inclusive of both first & last date and same has been confirmed by the PD. **(Closed)**
2) **In table 1 of MR:** PP has confirmed that the skilled, unskilled, semi-skilled and highly skilled workers are present in the plant and wages of all types employees has been mentioned throughout the monitoring report and same has been checked and confirmed. **(Closed)**
3) **In section C of MR:**
   **a)** PP has mentioned about the O&M that the project is managed by the PP itself i.e. Fortum FinnSurya Energy Private Limited and same has been checked and confirmed. **(Closed)**
   **b)** PP has updated the section to include the information regarding emergency preparedness and same has been checked and confirmed. **(Closed)**
   **c)** PP has mentioned the make of the meters and same has been checked and confirmed. **(Closed)**
4) PP has confirmed that the 5-year calibration frequency is in line with the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 and same has been checked and verified. **(Closed)**

**Hence, CAR#03 is Successfully closed.**

**Description of Forward Action Requests raised by VVB:**

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

**Declaration**

All CARs, CLs, and FARs from the Verification

| **Total Number of CAR s** | 02 | **Total Number of CLs** | 01 | **Total Number of FAR s** | 00 |
|---|---|---|---|---|---|
| **Status of CARs** | ☐ Open<br>☒ Closed<br>☐ Turned to a FAR | **Status of CLs** | ☐ Open<br>☒ Closed<br>☐ Turned to a FAR | **Status of FARs** | ☐ Open<br>☐ Closed<br>☐ Turned to a FAR |

## 6. COMPETENCE OF VERIFICATION TEAM AND TECHNICAL REVIEWERS

**Team Leader-**



### COMPETENCE STATEMENT

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

### Roles

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

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

**Validator/ Verifier**



## COMPETENCE STATEMENT

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

### Roles

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

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

**Project Trainee**



**COMPETENCE STATEMENT**

| | |
|---|---|
| Name | Kriti Das |
| Nationality | Indian |
| Countries of Experience | India |
| Education Qualification | M.Sc. (Environmental Science)<br>B.Sc. (Biotechnology) |
| Year of Experience | Fresher |
| Area of Expertise | NA |
| Eligible Sectoral Scope | NA |

**Roles**

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

| | | | |
|---|---|---|---|
| **Reviewed by** | Vandana Gupta (Quality Manager) | Date | 02/09/2023 |
| **Approved by** | Vivek Kumar Ahirwar (Technical Manager) | Date | 02/09/2023 |

**History of Documents**

| Version | Date | Amendment Summary* | Prepared By | Approved By |
|---|---|---|---|---|
| 1.2 | 29/11/2022 | Inclusion of Project Trainee, Validator/Verifier Trainee and Local Expert (Country Wise) in roles Table. | Vandana Gupta | Dr. Vikas Kumar Aharwal |
| 1.1 | 22/07/2021 | NA | Ayushi Garg | Vikas Aharwal |
| 1.0 | 27/03/2020 | NA | Ayushi Garg | NA |

*Amendment Summary adopted in VKU System on 12.10.2022

**Technical Reviewer**



## COMPETENCE STATEMENT

| | |
|---|---|
| Name | Vivek Kumar Ahirwar |
| Nationality | Indian |
| Countries of Experience | India, Madagascar, Thailand, Indonesia, Bangladesh, Nepal, Ghana, Uganda, Kenya etc |
| Education Qualification | B.E. (Mechanical Engineering)<br>M. Tech (Energy Management) |
| Year of Experience | 12 Years + |
| Area of Expertise | Climate Change & Environment |
| Eligible Sectoral Scope | TA 1.1 - Thermal energy generation<br>TA 1.2 - Renewables<br>TA 2.1 - Energy Distribution<br>TA 3.1 - Energy Demand |

## Roles

| | |
|---|---|
| Project Trainee | NO |
| Validator/Verifier Trainee | NO |
| Validator | YES |
| Verifier | YES |
| Team Leader | YES |
| Technical Reviewer | YES |
| Local Expert (Country Wise) | YES |
| TA Expert (1.1, 1.2, 2.1, 3.1) | YES |
| Financial Expert | YES |

| | | | |
|---|---|---|---|
| **Reviewed by** | Vandana Gupta (Quality Manager) | Date | 28/02/2023 |
| **Approved by** | Dr. Vikas Kumar Aharwal (Director) | Date | 04/03/2023 |

**History of the Document**

| Version | Date | Amendment Summary* | Prepared By | Approved By |
|---|---|---|---|---|
| 2.1 | 23/04/2024 | Change in VKU address at front page | Apoorva Gupta | Dr. Vikas Kumar Aharwal |
| 2.0 | 28/08/2023 | Revisions done in all sections as per the requirement of GS4GG Standard | Vandana Gupta | Dr. Vikas Kumar Aharwal |
| 1.1 | 22/07/2021 | NA | Ayushi Garg | Vikas Aharwal |
| 1.0 | 17/03/2020 | NA | Ayushi Garg | NA |

*Amendment Summary adopted in VKU System on 12.10.2022