



RENEWABLE SOLAR POWER PROJECT BY RISHABH RENERGY



Document Prepared By

LGAI Technological Center S.A. (Applus+ Certification)

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Summary:

Verification purpose: LGA Technological Center S.A. (Applus+ Certification) (Hereafter referred as Applus+ Certification) has been appointed by “Rishabh Renergy Pvt. Ltd.” to perform the 2nd periodic verification of the “Renewable Solar Power Project by Rishabh Renergy” (VCS ID 2023). The main purpose of this verification activity is to have an independent third party for the assessment of the project design, monitoring report to ensure a thorough assessment of the proposed project activity against the applicable CDM and VCS requirements.

The purpose of the project activities to generate energy electricity by the utilization of solar energy and further selling the generated energy to the Indian grid. In this process there is no consumption of any fossil fuel and hence it does not lead to any greenhouse gas emissions. Thus, electricity would be generated through sustainable means without causing any negative impact on the environment.

Start date of the project activity is the 28-March-2018 (Project commissioned date). The monitoring period for this VCS verification is 02-November-2019 to 30-June-2021 (including both days) and the project activity achieved 24,224 tCO₂e emission reductions during this monitoring period thereon displaced 25,869 MWh amount of electricity from the generation-mix of power plants connected to the Indian Grid, which is mainly dominated by thermal/fossil fuel-based power plant.

The scope of the verification is the independent and objective review of the Monitoring Report (MR). The MR is reviewed against the relevant criteria (see above) and decisions by the CDM Executive Board and VCS executive board, including the approved baseline and monitoring methodology. The verification was based on the guidance given in the CDM validation and verification standard for project activities, version 03.0, review against registered PD and Final Validation report, CDM Project Standard for project activities, version 03.0, CDM project cycle procedure for project activities, version 03.0, VCS program guideline version 4.0 and VCS Standard version 4.1.

A risk-based approach has been followed to perform this verification activity. In the course of verification, 05 Corrective Action request (CAR) and 00 Clarification Requests (CLs) were raised and successfully closed. No FAR was raised during this verification. The review of the Monitoring report and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and PP have provided LGA Technological Center S.A. (Applus+ Certification) with sufficient evidence to verify the fulfilment of the stated criteria of VCS.

The assessment team has employed a risk-based approach to assess the completeness and accuracy of the claims and conservativeness of the assumptions in the MR. The main focus of the assessment team is to identify the significant risks for the project implementation and the generation of VERs. The verification is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the monitoring report combined.

The only purpose of the verification is its usage during the issuance process as part of the VCS project cycle.

Therefore, LGAI Technological Center S.A. (Applus+ Certification) can't be held liable by any party for decisions made or not made based on the verification opinion, which will go beyond that purpose.

The verification has been planned and organized to achieve a Reasonable Level of assurance as per the requirement of VCS. No sampling procedure applied for document verifications. The entire documents checked/verification conducted to arrive at positive verification conclusions.

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1 INTRODUCTION

1.1 Objective

LGA Technological Center S.A. (Applus+ Certification) (Hereafter referred as Applus+ Certification) has been appointed by “Rishabh Renergy Pvt. Ltd.” to perform the 2nd periodic verification of the “Renewable Solar Power Project by Rishabh Renergy” under guideline version 4.0 and VCS standard version 4.1. The objective of this verification activity is to have an independent third party for the assessment of the project design, Monitoring Report and Final Verification report and to ensure a thorough assessment of the proposed project activity against the applicable CDM and VCS requirements. In particular;

- The project's baseline is assessed against AMS-I. D of version 18.0.
- The project's monitoring plan is assessed against “AMS-I. D of version 18.0.
- the projects compliance with the requirements of Article 12 of the Kyoto Protocol, the CDM Modalities and Procedures as agreed in the Marrakech Accords under decision 3/CMP.1, the annexes to this decision, subsequent decisions and guidance made by COP/MOP & CDM Executive Board and other relevant rules, including the Host Country legislation and sustainability criteria along with VCS guideline version 4.0 and standard version 4.1
- CDM validation and verification standard for project activities, Version 03.0
- CDM Project Standard for project activities, version 03.0
- CDM project cycle procedure for project activities, version 03.0
- VCS program guideline v4.0
- VCS standard v4.1

Verification is a requirement for all VCS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of verified emission reductions (VERs).

1.2 Scope and Criteria

The scope is defined as an independent and objective review of the Monitoring report (MR) prepared as per the registered PD and registered approved methodology AMS-I. D version 18. The MR is reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board and VCS standard version 4.1 and guideline version 4.0, including the approved baseline and monitoring methodology AMS-I.D version 18.0. The verification was based on the requirements in the CDM validation and verification standard for project activities, Version 03.0, CDM Project Standard for project activities, version 03.0, CDM project cycle procedure for project

activities, version 03.0 and VCS program guideline version 4.0 and VCS Standard version 4.1.

The verification is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the Monitoring report. In line with Guidelines for Application of materiality in verifications, the verification team has conducted a complete verification of all the information presented in the monitoring report and data monitored as presented in the emission reduction calculation spread sheet. It follows the paper trail back to the raw data such as meter reading records and invoices. There are no material errors, overestimation of ER, omission or misstatement. Verification team conducted Onsite visit due to pandemic situation and equipment's, technical details and metering/monitoring arrangement verified through photos/certificate shared by PP. The verification team has reviewed all the documents like commissioning certificates, technical specification, O&M practices, JMR, invoices, training records, grievance registers etc.

1.3 Level of Assurance

Applus + Certification has planned and performed the verification by obtaining evidence and other information and explanations that assessment team considers necessary to give reasonable assurance that reported estimated GHG emission reductions are fairly stated. All documentary evidences were checked, an Onsite visit was conducted due to pandemic situation and technical details and metering/monitoring arrangement verified through photos/certificate shared by PP to arrive at a verification conclusion by the assessment team.

In our opinion, the estimated GHG emissions reductions were calculated correctly on the basis of the approved baseline and monitoring methodology "AMS-I. D of version 18.0" and the VCS Standard version 4.1.

1.4 Summary Description of the Project

The project activity is a solar based power generation project. The project activity involves installation of 14 MW solar project in Harapanahalli village in Davangere district of Karnataka. The commissioning details of the project and their location of installation are mentioned in the table below:

Project Investor	Capacity (MW)	COD	Connection with the Grid	State
Rishabh Buildwell Pvt. Ltd	14	28-March-2018	Indian Grid	Karnataka

The monitoring period this VCS verification covered from 02-November-2019 to 30-June-2021 (inclusive of both dates) and the project activity achieved 24,224 tCO₂e emission reductions during this monitoring period.

Assessment team checked the Commission project activity with the commissioning Certificates and found correct. The project is implemented as per the description in the registered PD. No event observed during the current monitoring period which can alter or deviate from the methodology requirement.

2 VERIFICATION PROCESS

2.1 Method and Criteria

Verification Process: The project assessment is based on the “CDM validation and verification standard for project activities, Version 03.0 and “VCS standard version 4.1, program guideline version 4.0” and is conducted using standard auditing techniques to assess the correctness of the information provided by the project participants. Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), and relevant host country experience for evaluating the VCS project activity are appointed.

Once the project is received by the assessment team, the members of the assessment team carried out: -

1. A desk review of the Monitoring report against the registered PD and final validation report;
2. Follow-up interviews with project participant;
3. The resolution of outstanding issues and the issuance of the final verification report and opinion.

The prepared verification report and other supporting documents then undergo an internal quality control at the HQ (Accredited office) before being submitted to the VCS executive board.

In order to ensure transparency, assumptions must be clear and stated explicitly and background material must also be referenced. Applus+ Certification has developed a specific checklist customized for the project. The checklist demonstrates, in a transparent manner, the project criteria (requirements), discussion on each criterion by the assessment team, and the results from validating the identified criteria.

Appointment of the assessment team

According to the sectoral scope / technical area and experience in the sectoral or national business environment, Applus+Certification has composed a project assessment team

am in accordance with the appointment rules in the internal Quality Management System of Applus+ Certification.

The composition of audit team shall be approved by the Applus+ Certification ensuring that the required skills are covered by the team.

The four qualification levels for team members that are assigned by formal appointment rules are as presented below:

- Lead Auditor (LA).
- Auditor (A) / Auditor in Training (AiT).
- Technical Expert (TE).
- Technical Reviewer (TR).

The sectoral scope / technical area knowledge linked to the applied methodology/ies shall be covered by the assessment team.

Name	Role	SS Coverage	TA Coverage	Financial aspect	Host country experience
Dr. Atul Takarkhede	LA/TE	YES	YES	NA	YES
Mr. Simon Shen	TR	YES	YES	NA	NA

The detail regarding the assessment team is provided below in this report as Appendix 3

Document review

The Monitoring report version 01 submitted by the PP was reviewed against the approved methodology, registered PD, final validation report and other relevant criteria to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources has been done. A complete list of all documents and evidence material reviewed is included in this report below in Appendix 1.

Follow-up interviews

An Onsite visit is conducted by Applus+ Certification. Audit team performed interviews, via video/telephone conferences with project stakeholders to confirm selected information and to resolve issues identified in the document review. The detail is provided in this report.

Resolution of Clarification and Corrective Action Request

The objective of this phase of the Verification was to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified for Applus+ Certification positive conclusion on the Monitoring report. The Corrective Action Requests and Clarification Requests raised by Applus+ Certification were resolved

during communications between the Client and Applus+ Certification to guarantee the transparency of the verification process, the concerns raised and responses given are summarized below in the Appendix 2.

The final MR Version 02 submitted by PP serves as the basis for the final assessment presented. Additional changes to the project during the verification process are not considered to be significant with respect to the main CDM/VCS objectives. The two CDM/VCS main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

Internal quality control

As final step of a verification of the final documentation including the verification report and the checklist have to undergo an internal quality control by the technical review committee, i.e., each report has to be finally approved either by the head of the technical review committee or the deputy. In case one of these two persons is part of the assessment team approval can only be given by the other one to avoid any conflict of Interest.

After confirmation of the PP the positive verification opinion and relevant documents are submitted to the VCS board through the VCS web-platform.

2.2 Document Review

The details of the document observed during the verification process are listed below in Appendix 1 of this report

2.3 Interviews

An Onsite visit was conducted for the project activity on 09-December-2021.

The names of the persons interviewed during Onsite visit interview is given below;

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Gupta	Mr. Vipin	PP Representative	09-December-2021	Project Implementation, JMR & invoicing procedure, calibration, grievance mechanism, Management practices, data storage, QA/QC	Dr. Atul Takarkhede
2.	Kumar	Mr. Thota Kiran	HOD (Electrical), Renewable Dept.			

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
3.	Yadav	Mrs. Neetu	EKI Energy Services Limited		GHG calculations, MR and ER preparation, Data collection, data storage, QA/QC	

2.4 Site Inspections

Duration of on-site inspection: 09-December-2021				
No.	Activity performed on-site	Site location	Date	Team member
1.	Assessment team checked the implementation of the project, Baseline emission, Emission reduction calculation, technical description of the project and Monitoring. Assessment team also checked that whether the monitoring plan as described in the VCS PD is actually practised onsite. Also, assessment team checked any change in host country criteria which may affect the baseline of the project activity.	District Davangere, State-Karnataka, India	09-December-2021	Dr. Atul Takarkhede

2.5 Resolution of Findings

The objective of this phase of the Verification was to resolve the requests for corrective actions and clarification and any other outstanding issues from verification which need to be clarified for Applus+ Certification's positive conclusion on the Monitoring report. The Corrective Action Requests and Clarification Requests raised by Applus+ Certification were resolved during communications between the Client and Applus+ Certification to guarantee the transparency of the verification process, the concerns raised and responses given are summarized below in the Appendix 2.

The final MR Version 02 submitted by PP serves as the basis for the final assessment presented. Additional changes to the project during the verification process are not considered to be significant with respect to the main CDM/VCS objectives. The two CDM/VCS main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

Areas of validation and verification findings	No. of CL	No. of CAR	No. of FAR
Project design document and Monitoring report	00	01	00
Description of project activity	00	01	00
Application of selected baseline and monitoring methodology and selected standardized baseline			
Applicability of methodology and standardized baseline	00	00	00
Deviation from methodology	00	00	00
Clarification on applicability of methodology, tool and/or standardized baseline	00	00	00
Project boundary	00	00	00
Establishment and description of baseline scenario	00	00	00
Demonstration of additionality	00	00	00
Emission reductions	00	01	00
Calibration details	00	01	00
Monitoring plan	00	00	00
No Net harm assessment	00	00	00
Local stakeholder consultation	00	01	00
Others (please specify)	00	00	00
Total	00	05	00

The list of findings and the resolution is presented in Appendix 2 of this report.

2.5.1 Forward Action Requests

This is 2nd periodic verification of the project activity and no FAR was raised from validation and previous verification.

2.6 Eligibility for Validation Activities

This section is not applicable for present verification, as Applus+ Certification holds the accreditation for Validation of projects under this Sectoral Scope.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The project is not applied under any other GHG program like CDM, GS, hence not applicable. PP has submitted an undertaking regarding no participation in any other GHG mechanism.

3.2 Methodology Deviations

This section is not applicable for present verification as no methodology deviation sought during this verification

3.3 Project Description Deviations

During this verification it was observed that the project activity is implemented as per the approved VCS PD & MR. Further, this is 2nd periodic verification and no project description deviation was sought during previous monitoring period and also during this monitoring period.

3.4 Grouped Project

This is not a grouped project. Thus, this section is not applicable.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

During the Onsite visit, it was concluded that the project is implemented as per the requirement of the registered VCS PD and approved monitoring plan, During the current monitoring period, it was observed that no unforeseen incident/event evolved which can impact the operation of the project activity which was verified from breakdown records. The project undergone continuous operation and only scheduled maintenance is observed as per the manufactures specification which is acceptable to the assessment team and evident from JMRs.

The project activity is a 14 MW solar power project. Project locations are confirmed by the verification team during the Onsite visit. The plant location including latitudes and longitudes are confirmed below:

Project Investor	Capacity (MW)	Village	District	Latitude	Longitude
Rishabh Buildwell Pvt. Ltd.	14	Davanagere	Karnataka	14° 47' 31.3296 N	76° 05' 12.1200" E

Verification team confirmed from the registered PD and from previous verification reports that the location of the project activity including the coordinates is same as mentioned in the registered VCS PD.

Assessment team checked the commissioning certificate and confirmed that the dates of Commission for the Solar plants are correct. Assessment team also conform during

interview with the PPs representatives that there is no change in project design and the project is implemented as per the description provided in the VCS PD. The details of project and commissioning dates of Solar plants are provided below:

Project Investor	Capacity (MW)	COD	Connection with the Grid	State
Rishabh Buildwell Pvt. Ltd	14	28-March-2018	Indian Grid	Karnataka

The project boundary includes the electricity generation equipment at the project site, substation and the regional grid (now Indian grid).

Assessment team also checked the technical details of the Solar plants installed onsite from documents submitted by PP and previous verification reports. The same is cross checked from the photographs of the number plates, module capacity etc. submitted by PP & also cross checked from the technical details from Manufacturer.

The technical details of the 14 MW solar project by Rishabh Buildwell Pvt. Ltd.

S.no.	Technical details of the equipment	Description
1	Technology Used	Solar PV technology (multi-Crystalline silicon)
2	Number of modules and their capacity	Module Make-Canadian Solar No. of Modules- 47620 Model capacity- 15Wp
3	Number of Inverters& Capacity	Inverter Make-ABB No. of Inverters used-14 Capacity-1000 KW

The assessment team confirmed that there is no proposed or actual change to the project design during this monitoring period. The project design as mentioned in the registered PD is implemented and thus the same is acceptable to the assessment team. All required monitoring equipment's and procedures as mentioned in the registered PD are available and implemented in an appropriate manner.

The organisational role and responsibility as mentioned in the registered PD & MR is followed onsite. All the emergency preparedness as mentioned in the registered PD is followed onsite and no discrepancies were found regarding the same. Meters are calibrated as per calibration frequency in registered VCS PD. All the emergency preparedness as mentioned in the registered VCS PD is followed onsite and no discrepancies were found regarding the same. Thus, completeness of the monitoring plan confirmed and there are no any material discrepancies between the actual monitoring system and the plan provided in the registered PD. CAR 01 is raised for the inconsistency with respect to MR template guidelines and CAR 02 is raised for

supporting evidences for No-Double counting and closed successfully after proper response of PP.

Assessment team confirms following during the verification Onsite visit:

1. Start date of the project activity is 28-March-2018 as mentioned in the registered VCS PD & MR.
2. An undertaking letter dated 20-November-2021 has been submitted by PP for no double counting with any other GHG program. PP also has given a written declaration that project has not claimed other form of GHG credit for the concerned monitoring period. Assessment team also checked that the projects are not registered under the REC mechanism of India and the same can be cross-checked at <https://recregistryindia.nic.in>. PP has given a written declaration that the credit claimed under VCS for the current monitoring period is not claimed under any other GHG mechanism.
3. Assessment team confirms that this is the 2nd monitoring under VCS and covers the activity from 02-November-2019 to 30-June-2021 (inclusive of both dates). The project activity adopts renewable crediting period of 10 years period and can be renewed for maximum 2 times. 28-March-2018 is the start date and 27-March-2028 will be end date of the crediting period.

The GHG credits from 02-November-2019 to 30-June-2021 will be claimed under VCS only. At any point of time during the crediting period, the project proponent will abide by the “No Double Counting”.

4. Assessment team checked and found that the Project proponent of the project activity mentioned in Section 1.3 of monitoring report is correct:
5. Assessment team also checked the details of other entity mentioned in Section 1.3 of monitoring report and found correct.
6. The quantified emission reduction calculation for the monitoring period is correct and conservative. Assessment team also compared actual VER with the estimated VER and found that the actual VER is 24,224 tCO₂e which is 36.91% lower than the estimated emission reductions 38,397 tCO₂e (23,089 tCO₂e/365 days x 607 days) during this monitoring period which is due to lower generation of energy by the solar plants during the current monitoring period.

SUSTAINABLE DEVELOPMENT:

Ministry of Environment, Forests & Climate Change, Government of India has stipulated following indicators for sustainable development in the interim approval guidelines for GHG projects.

Social well-being: The project activity has resulted in creating job opportunities for the local population on temporary and permanent basis. Manpower is required both during erection and operation of the renewable energy projects. This results in the improvement in living standards of the local community. The installation of the renewable energy projects also led to development of basic infrastructure like roads,

communication with the nearby cities etc. which also improved in living standards of the local population.

Economic well-being: The project activity has created direct and indirect job opportunities to the local community during installation and operation of the renewable energy projects. The investment for the project activity has led to the improvement in the economic activity in the local area.

Technological well-being: The successful operation of project activity has led to promotion of solar power generation and would encourage other entrepreneurs to participate in similar projects.

Environmental well-being:

The project activity utilizes renewable energy for generating electricity which otherwise would have been generated through alternate fuel (most likely - fossil fuel) based power plants, contributing to reduction in specific emissions (emissions of pollutant/unit of energy generated) including GHG emissions. As renewable energy projects produce no end products in the form of solid waste (ash etc.), they address the problem of solid waste disposal encountered by most other sources of power. Being a renewable resource, to generate electricity contributes to resource conservation. Thus, the project causes no negative impact on the surrounding environment.

In view of the above, the PP has considered that the project activity profoundly contributes to the sustainable development.

4.2 Safeguards

4.2.1 No Net Harm

No potential environment or socio-economic matter was found during the documents review of VCS PD and grievance register etc. The project is renewable energy project and thus no negative impact observed due to project activity.

The project activity promotes environmental and socio-economic well-being as it results in zero GHG emissions due to installation and operation of clean, renewable energy technology for electricity generation. The report on “Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September 2013¹. This report clearly mentioned that solar/Wind power project activity operations do not result in direct air pollution, noise pollution. Moreover, also as per the Central Pollution Control Board of India notification² solar/wind project falls under White Category and are practically non-polluting.

¹ <https://smartnet.niua.org/sites/default/files/resources/report-on-developmental-impacts-of-RE.pdf>

² http://envfor.nic.in/sites/default/files/Latest_118_Final_Directions.pdf

4.2.2 Local Stakeholder Consultation

Local stakeholder consultation has been conducted at the time of project registration. For on-going stakeholder's communication, PP have maintained grievance register at the site office. All the stakeholders are happy with the implementation and operation of the project activity and no negative comments envisaged for the project activity. Complaint/suggestion/feedback register is maintained at site as a part of ongoing communication with stakeholders in line with clause 3.16.17 of VCS Standard, ver. 4.0 and appropriate actions taken time to time by PP.

Assessment team checked the grievance register provided by PP and found that local stakeholders can anytime lodge their grievances if any in the register over the operational life time of the project. During current monitoring period no grievance was received. Thus, assessment team is of the opinion that the ongoing stakeholder mechanism is adequate and appropriate. CAR 03 was raised during the verification process and closed successfully. Please refer Appendix 2 of this report for the detail closure of the CAR.

4.3 AFOLU-Specific Safeguards

This section is not applicable as this project activity is a non-AFOLU project activity.

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

Means of verification	The verification team assessed whether the data and calculations of GHG emission reductions achieved resulting from the VCS PD. The verification team has checked whether calculations of baseline GHG emissions, project GHG emissions and leakage GHG emissions have been carried out in accordance with the formulae and methods described in the monitoring plan of the VCS PD.
Findings	CAR 04 was raised during the verification process and closed successfully. Please refer Appendix 2 of this report for the detail closure of the CAR.
Conclusion	Baseline Emissions: The baseline Emissions for a given year is calculated by multiplying the energy baseline with the grid emission factor. The grid in this case would be the 'Indian Grid' Formula Used: - $BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$ Where , BE_y = Baseline Emissions in year y, tCO₂ $EG_{facility,y}$ = Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh) $EF_{grid, CM, y}$ = CO₂ emission factor for grid in year y, tCO₂/MWh

Ex-ante parameters:

The baseline emission factors are taken ex-ante in line with the registered VCS PD as well as cross checked with section validation report and found correct. The baseline emission factors are calculated by the Central Electricity Authority, Govt. of India. The values of OM and BM are sourced from the CEA CO₂ Baseline database version 14. The data Combined margin CO₂ emission factor ($EF_{grid,CM,y}$) is equal to 0.9368 tCO₂/MWh. The calculation approach was in line with the VCS PD.

Values are as follows:

$$EF_{grid,OM,y} = 0.9610 \text{ tCO}_2/\text{MWh}$$

$$EF_{grid,BM,y} = 0.8644 \text{ tCO}_2/\text{MWh}$$

$$EF_{grid,CM,y} = 0.9368 \text{ tCO}_2/\text{MWh}$$

Ex-post parameter:

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

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

This parameter is calculated as net electricity supplied to the grid by the solar plant in a given month from the difference of total energy exported and total energy imported. The Export & Import values for the particular month are available from the B-Forms issued by the state Utility as per below calculation:

$$\text{Net Electricity} = \text{Export} - 115\% \text{ of Import} - \text{transmission losses (if any)}.$$

Reading at metering point is carried out once in a month in presence of O&M officials and state electricity board personnel. The electricity export and Import from each plant is recorded by an energy meter installed at substations. Electricity exported and Imported by the projects are calculated as the sum of values of electricity exported/imported and forms the part JMRs and Invoices. The primary source of data is monthly form-B issued by BESCO. Invoices are used to cross check the net electricity exported to grid. All the energy meters of accuracy class 0.2s are under the purview of the state electricity boards. The details of electricity meters are provided in Appendix 5 of this report

The calculations/measurement of net electricity supplied to grid is under purview of state electricity board and the PP/Project activity Instance owner has no role on it. PP/Project activity Instance owner gets value of net electricity supplied to grid and hence this parameter is mentioned as a part of monitoring plan

The net electricity supplied the grid by the project activity during the

	monitoring period is 25,869 MWh. The verification team has checked the entire monthly “Form-B” the net electricity generation supplied to the grid and cross checked the invoices raised by the PP to the state Utilities. All relevant monitoring parameters 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. Baseline emission factor is calculated as combined margin, consisting of a combination of operating margin (OM) and build margin (BM) factors. BE_y (baseline emissions), tCO₂e $BE_y = 25,869 \text{ MWh} \times 0.9368 \text{ tCO}_2\text{e/MWh}$ $= 24,224 \text{ tCO}_2\text{e (round down values)}$ As per applied methodology AMS-I. D, version 18 ,the VCS PD & MR, project emission is considered zero as the project activity involved Solar power generation. Hence, $ER_y = BE_y - PE_y$ $= 24,224 - 0$ $= 24,224 \text{ tCO}_2\text{e (round down values)}$ Verification team confirms that the monitoring has been carried out in accordance with the monitoring plan contained in the registered VCS PD. Assessment team confirmed that the GHG emission reductions and removals have been quantified correctly in line with the registered VCS PD.
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4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

Means of verification	The verification team checked the Calibration details of the monitoring meters with the calibration certificates.
Findings	CAR 05 was raised during the verification process and closed successfully. Please refer Appendix 2 of this report for the detail closure of the CAR.
Conclusion	The metering arrangement is bi-directional energy meters (Main and Check) of accuracy class 0.2s at the State Electricity Board (SEBI) sub-station. These electricity meters are being used by state electricity board for Share certificate statements. These meters record several parameters including electricity exported & imported. These electricity meters are being used by state electricity board for monthly generation reports. The details like make, Serial number, Calibration dates etc are

	provided are as follows:-			
	Meter Details	Main Meter	Check Meter	Calibration Compliance
	Meter Serial No	18015358	17071186	No delay has been observed throughout the Monitoring Period
	Meter Make	L & T	L & T	
	Accuracy Class	0.2 s	0.2 s	
	Date of Calibration	27-March-2018	27-March-2018	
	Due date of next calibration	26-March-2023	26-March-2023	

Verification team confirms that all the energy meters (main and check meter) installed at the substation are of accuracy class of 0.2s and are calibrated as per the calibration frequency mentioned in monitoring plan in VCS PD i.e. The calibration frequency of meters is once in 5 years. No delayed calibrations were observed in the project activity for this monitoring period. All the meters are of same accuracy class i.e., 0.2s as per the requirement of the registered PD. On-site photographs and interview during Onsite visit with O&M personnel also confirms the same.

The calculation of net electricity supplied to grid is under purview of state electricity board and PP does not have control on it. Calibration details of the monitoring meters checked with calibration certificates submitted by PP and found that calibration frequency of 5 years is complied. Thus, no delayed calibration is observed and thus the same is found appropriate.

The break down log is checked and there is no major breakdown during the monitoring period. No unforced error observed. No sampling procedure applied for monitoring of the data parameter and entire documents were checked by the assessment team to arrive at positive verification conclusions. The monitoring plan is followed at the project site. The monitoring meters were calibrated in line with the registered monitoring plan and there was no delay in calibration observed. Thus, assessment team concluded that the evidences are sufficient in quantity, and appropriate for the quality, to determine the GHG reductions and removals.

4.6 Non-Permanence Risk Analysis

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
NA	NA	NA	NA	NA

5 VERIFICATION CONCLUSION

Applus+ Certification has been engaged by Rishabh Renergy Pvt. Ltd. to perform the 2th periodical verification of the “Renewable Solar Power Project by Rishabh Renergy”.

The project participants are responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project’s monitoring plan in the registered VCS PD and the applied methodology ASM-I.D version 18 .0.

Our verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakesh accord, as well as those defined by the CDM Executive Board. Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. Further, the verification has been planned and organized to achieve a Reasonable Level of assurance as per the requirement of VCS. No sampling procedure applied for document verifications. The entire documents checked/Power plant verification conducted to arrive at positive verification conclusions. The verification team can confirm that:

- the project is operated as planned and described in the project document;
- the monitoring plan is as per the applied methodology;
- the monitoring process in Monitoring Report is as per the registered PD & MR;
- the development and maintenance of records and reporting procedures are in accordance with the monitoring plan;
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately;
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements.
- A Reasonable Level of assurance was achieved as planned, during verification process.
- Verification period: 02-November-2019 to 30-June-2021 (inclusive of both days)

Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO ₂ e) ³	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
02-November-2019 to 31-December-	2,544	0	0	2,544

³Rounddown values

Year	Baseline emissions or removals (tCO ₂ e) ³	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
2019				
01-January-2020 to 31-December-2020	14512	0	0	14512
01-January-2021 to 30-June-2021	7168	0	0	7168
Total	24,224	0	0	24,224

APPENDIX 1: DOCUMENTS REVIEWED OR REFERENCED (VERIFICATION)

No.	Author	Title	References to the document	Provider
1.	BESCL	Commissioning certificates of the Solar plants	31-March-2018	PP
2.	NA	Contract of the project participant with the DOE	Contract document signed between PP and DOE	PP
3.	NA	The operational lifetime of the project activity from the manufacturer (Technical specifications)	Manufacturer technical specifications	PP
4.	NA	Registered PD & MR https://registry.terra.org/app/projectDetail/VCS/2023	27-December-2019	PP
5.	BESCL	Calibration Certificates of energy meters	27-March-2018	PP
6.	NA	MR version 01 MR version 02	11-November-2021 19-December-2021	PP
7.	NA	Emission reduction sheet version 01 Emission reduction sheet version 02	11-November-2021 19-December-2021	PP
8.	NA	O & M Agreements	-	PP
9.	NA	Power Purchase Agreements (PPAs)	-	PP
10.	NA	Tools/ guidelines used in the project activity - Glossary of CDM terms version 07 - VCS standard Version 4.1 - VCS Program Guide 4.0 - VCS verification report template version 4.0	UNFCCC CDM/VCS web site	UNFCCC
11.	BESCL for Form-B, PP for invoice	Monthly statement- JMR & invoices for the complete monitoring period	-	PP
12.	PP	Declaration regarding no participation in other GHG program for the concerned monitoring period	17-September-2021	PP
13.	NA	Breakdown details for the monitoring period	-	PP
14.	NA	Employment records for plant persons	-	PP
15.	NA	Grievance Register maintained at site	-	PP
16.		CDM validation and verification standard for project activities, Version 03.0	-	UNFCCC
17.		Previous Joint Validation & Verification Report, Report ID: VCS.VAL.19.50	27-December-2019	PP
18.		Breakdown details of the power plant	-	PP

APPENDIX 2: CORRECTIVE ACTION REQUESTS, CLARIFICATION REQUESTS AND FORWARD ACTION REQUESTS (CAR/CL/FAR)

Table 1. Remaining FAR from validation and/or previous verification

FAR ID	XX	Section no.	E.2	Date : DD/MM/YYYY
Description of FAR				
There is no FAR from the validation/previous verification of the project activity				
Project participant response				Date : DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				Date: DD/MM/YYYY
NA				

Table 2. CL from this verification

CL ID	XX	Section no.	NA	Date : DD-Month-YYYY
Description of CL				
NA				
Project participant response				Date : DD-Month-YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				Date: DD-Month-YYYY
NA				

Table 3. CAR from this verification:

CAR ID	01	Section no.	4.1	Date: 13-December-2021
Description of CAR				

During review of monitoring report following inconsistencies observed:

1. The provided weblink throughout the Monitoring report is not functional. Thus, corrective action sought.
2. The Content Page of the Monitoring report observed altered thus not in line with the VCS Template Version.4.0. corrective action sought.
3. Section 1.1 of the Monitoring report is not in line with the VCS Template Version.4.0. Thus, corrective action sought.
4. In section 1.11 of Monitoring report version 01, Title of authorized ministry for providing indicators of sustainable development is not in line with Host country webpage. Thus, corrective action sought.
5. Date format throughout the Monitoring report is not in line with the VCS Template Version.4.0, Thus, corrective action sought.
6. PP requested to submit copies of technical specifications of equipment, O&M agreement, PPA & Breakdown details of the project activity.
7. PP has mentioned commissioning date of project activity in section 1.1 of monitoring report, however to verify the same, supporting documents is missing, thus pp is requested to submit it to assessment team.

Project participant response

Date: 21-12-2021

1. The provided weblink throughout the Monitoring report are now updated and functional
2. The Content Page of the Monitoring report is now in line with the VCS Template Version.4.0
3. Section 1.1 of the Monitoring report is now in line with the VCS Template Version.4.0.
4. Title of authorized ministry for providing indicators of sustainable development in section 1.11 of Monitoring report version 01 is now in line with Host country webpage.
5. Date format throughout the Monitoring report is now in line with the VCS Template Version.4.0.
6. Technical specifications of equipment, O&M agreement, PPA & Breakdown details of the project activity are now submitted to assessment team for cross verifying.
7. Commissioning certificate of project activity is now submitted to DoE assessment team.

Documentation provided by project participant

1. MR Version -02
2. PPA
3. Commissioning Certificate
4. O&M agreement

DOE assessment

Date: 23-December-2021

1. PP has updated weblink throughout the Monitoring Report and all the provided weblinks are now functional. Thus, CAR is Closed. 2. The page number mentioned in the content section of the monitoring report is observed altered not in line with the VCS Template Version.4.0. Thus, CAR is Open. 3. Section 1.1 of the monitoring period is not in line with the VCS Template Version.4.0. Thus, CAR is open. 4. PP has rectified the Title of authorized ministry for providing indicators of sustainable development in section 1.11 of Monitoring report version 01 and is now in line with Host country webpage. Thus, CAR is closed. 5. Date format throughout the Monitoring report is not in line with the VCS Template Version4.0. Thus, CAR is open. 6. PP has submitted technical specifications of equipment, O&M agreement, PPA & Breakdown details of the project activity are now submitted to assessment team for cross verification. Thus, CAR is closed. 7. PP has submitted Commissioning certificate of project activity to DoE assessment team. Thus CAR is closed.	
Project participant response	Date 24-December-2021
1. The content section of the monitoring report is now updated. 2. Section 1.1 of the monitoring period is now updated and in line with the VCS Template Version.4.0 3. The Date format throughout the Monitoring report is now in line with the VCS Template Version4.0	
Documentation provided by project participant	
1. MR Version -02	
DOE assessment	Date: 27-December-2021
1. PP has updated the page number in content section of revised MR version 2.0. Thus, CAR is Closed. 2. PP has now updated the section 1.1 of the revised Monitoring report inline with the VCS template Version 4.0. Thus, CAR is Closed. 3. PP has revised the Date format throughout the revised Monitoring report and it is now in line with the VCS Template Version4.0. Thus, accepted and CAR is closed.	

CAR ID	02	Section no.	4.1	Date: 13-December-2021
Description of CAR				
PP is requested to submit an undertaking for no any double accounting for current monitoring period and for project activity is participated in other GHG program other than VCS.				
Project participant response				Date: 21-December-2021
1. No double accounting Declaration for current monitoring is now submitted to the DoE assessment team.				
Documentation provided by project participant				
1. No double accounting declaration				
DOE assessment				Date: 23-December-2021
PP has not submitted a No double accounting Declaration for current monitoring to the DoE assessment team. Thus, CAR is open.				
Project participant response				
1. No double accounting Declaration is now submitted to the DoE assessment team.				

Documentation provided by project participant	
1. No double accounting declaration	
DOE assessment	Date: 27-December-2021
PP has submitted document related to No double Counting /undertaking letter by PP Rishabh Group. Dated 20-November-2021.Thus, CAR is Closed.	

CAR ID	03	Section no.	4.2.2	Date: 13-December-2021
Description of CAR				
Section 2.2 the MR is not completed in line with the guidelines to complete monitoring report. Further, PP requested to submit records of ongoing local stakeholder consultation including grievance register etc.				
Project participant response				Date: 21/12/2021
1.A copy of grievance register is now submitted to the DoE assessment team.				
Documentation provided by project participant				
1. Grievance register				
DOE assessment				Date: 23-December-2021
1. PP has not submitted the copy of grievance register to the DoE assessment team. Thus, CAR is open.				
Project participant response				
1. The grievance register copy is now submitted to the DoE assessment team.				
Documentation provided by project participant				
Grievance register Copy				
DOE assessment				Date: 27-December-2021
PP has submitted the grievance register copy to the assessment. Found consistent with monitoring report. Thus, accepted and CAR is Closed.				

CAR ID	04	Section no.	4.4	Date: 13-December-2021
Description of CAR				
1. The value of baseline emission (BE_y) and net electricity generation ($EG_{PJ, y}$) throughout the Monitoring report is not in line with the other section of the MR. Thus, corrective action sought. 2. The value of baseline emission (BE_y) and net electricity generation ($EG_{PJ, y}$) is reserved till submission of Emission reduction (ER) sheet and supportings. Thus, Corrective action sought.				
Project participant response				Date: 21-December-2021
1. The value of baseline emission (BE_y) and net electricity generation ($EG_{PJ, y}$) throughout the Monitoring report is now updated and in line with the other section of the MR. 2. ER sheet along with the JMRs & Invoices are now submitted to the assessment team.				
Documentation provided by project participant				
1. MR Version -02 2. ER sheet				
DOE assessment				Date: 23-December-2021

1.	PP has updated the value of baseline emission (BE_y) and net electricity generation ($EG_{PJ, y}$) throughout the Monitoring report and it is in line with the other section of the MR. Thus, CAR is closed .
2.	PP has submitted the ER sheet along with the JMRs & Invoices to the assessment team. Thus, CAR is closed .

CAR ID	05	Section no.	4.5	Date: 13-December-2021
Description of CAR				
PP is requested to provide detailed complete information of metering equipment like serial number, make, calibration date and validity of calibration and calibration frequency which is missing in MR.				
Kindly submit supporting documents of electricity meters and calibration certificate for monitoring period under verification.				
Project participant response				Date: 21-December-2021
Complete information of metering equipment is now updated in appendix 1 of the MR. Calibration certificates are now submitted to the DOE assessment team for cross verifying .				
Documentation provided by project participant				
1. Calibration certificates 2. MR version -02				
DOE assessment				Date: 23-December-2021
PP has updated Complete information of metering equipment in appendix 1 of the MR Version.02 and Calibration certificates are now submitted to the DOE assessment team for cross verification. Thus, CAR is closed.				

Table 4. FAR from this verification

FAR ID	XX	Section No.		Date : DD-Month-YYYY
Description of FAR				
There is no FAR from this verification				
Project participant response				Date : DD-Month-YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				Date: DD-Month-YYYY
NA				

APPENDIX 3: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS

Verification team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk review	On-site inspection	Interview(s)	Verification findings
1.	Lead Auditor/Technical Expert	OR	TAKARKHEDE	ATUL	TQC-Outsourced entity	Yes	Yes	Yes	Yes

Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer (TR) / Technical Expert (TE)	EI	Shen	Simon	Applus+ Certification
2.	Approver	IR	Calle de Miguel	Agustin	Applus+ Certification

Short CVs of the Team:

1. **Dr. Atul Takarkhede** is Ph.D. (Environmental Sciences) from Institute of Science, RTM Nagpur University, Nagpur, and he has already published different technical papers related to environmental sciences. He counts with more than 11 years of experience in field of Environmental Auditing, consulting and accreditation. He is an expert in ISO 9001-14001, CO2/GHG Reporting, Carbon Foot Print, Energy, Water and Waste Management reporting for organizations' environmental performance. His professional portfolio is mainly related with carrying out EIA, conducting QA/QC of EIA Reports; conducting environmental/water audits; NABET requirements appliance, functional area expert in Water Pollution & Solid & Hazardous Waste management among others. Furthermore, he counts with solid experience on CDM-VCS-GS consultancy and auditing. Currently he is associated with True Quality Certifications Private Limited and empanelled with Applus+ Certification to carry out GHG audits in the aforementioned schemes.

2. **Mr. Simon Shen** (Master's Degree in Thermal Energy Engineering, Bachelor's Degree in Environmental Engineering) is an Auditor appointed by Applus+ LGAI for the GHG project assessment, auditing and technical review. He has more than 6 years of work experience in CDM/GS4GG/VCS project assessment and review with Applus+, apart from the years of experience working as GHG Auditor and ISO 9001/14001 in TUV SUD for 3.5 years before he joined Applus+. Mr. Simon Shen has extensive experience also as former Applus+ Shanghai CDM Technical Manager.

APPENDIX 4: ABBREVIATIONS

Abbreviations	Full texts
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction(s)
CEA	Central Electricity Authority
CL	Clarification request
CM	Combined Margin
CMS	Central Monitoring system
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EF	Emission Factor
EIA	Environmental Impact Assessment
ER	Emission Reductions
FAR	Forward Action Request
GHG	Greenhouse gas(es)
BESCL	Bangalore Electricity Supply Company Limited
BESCOM	Bangalore Electricity Supply Company Limited
GWP	Global Warming potential
PP	Project Participant