



SOLAR GROUPED PROJECT BY ACME GROUP(EKIESL-VCS-AUG-16-01)



Document Prepared By

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Summary:

Verification purpose: LGA Technological Center S.A. (Applus+ Certification) (Hereafter referred as Applus+ Certification) has been appointed by “ACME Group” to perform the 5th periodic verification of the “Solar Grouped project by ACME Group (EKIESL-VCS-Aug-16-01)” (VCS ID 1580). 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 project activity solar based power generation is a grouped project activity having 11 project activity instances with one (1) small scale project activity and 10 large scale project activity with combined installed capacity of 381.5 MW. The details of project instances are as follows:

Project Activity instance	PP (SPV) Name	MW
1	Mihit Solar Power Private Ltd. 25 MW	74
	Mihit Solar Power Private Ltd. 25 MW	
	Mihit Solar Power Private Ltd. 24 MW	
2	ACME Jaisalmer Solar Power Pvt. Ltd.	20
3	Aarohi Solar Pvt. Ltd.	50
4	Dayanidhi Solar Power Pvt. Ltd.	40
5	Niranjana Solar Energy Pvt. Ltd.	20
6	Vishwatma Solar Energy Pvt Ltd.	30
7	Acme Raipur Solar Power Pvt. Ltd.	30
8	Dayakara Solar Power Pvt Ltd	30
9	Grahati Solar Energy Pvt Ltd	50
10	Acme Odisha Solar Power Pvt Ltd	25
11	Eminent Solar Power Pvt Ltd.	12.5
Total Capacity		381.5

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 22-June-2015. On this day the 1st SPV company i.e. -ACME Odisha Solar Power Pvt. of 25 MW was commissioned. The grouped project activity is a voluntary action and each SPV is the project proponent of their project instance. ACME group is parent company of these SPVs. The monitoring period for this VCS verification is 01-September-2019 to 31-December-2020 (including both days) and the project activity achieved 839,190 tCO₂e emission reductions during this monitoring period thereon displaced 858,338.04 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 02.0, review against registered PD and Final Validation report, CDM Project Standard for project activities, version 02.0, CDM project cycle procedure for project activities, version 02.0, 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, 07 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 LGAI 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

LGAI Technological Center S.A. (Applus+ Certification) (Hereafter referred as Applus+ Certification) has been appointed by “ACME Group” to perform the 5th periodic verification of the “Solar Grouped project by ACME Group (EKIESL-VCS-Aug-16-01)” 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” & “ACM0002 - Version 17.0”
- The project’s monitoring plan is assessed against “AMS-I. D of version 18.0” & “ACM0002 - Version 17.0”
- 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 02.0
- CDM Project Standard for project activities, version 02.0
- CDM project cycle procedure for project activities, version 02.0
- 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 & ACM0002 - Version 17. 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 & ACM0002 - Version 17. The verification was based on the

requirements in the CDM validation and verification standard for project activities, Version 02.0, CDM Project Standard for project activities, version 02.0, CDM project cycle procedure for project activities, version 02.0 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 remote audit 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, a remote audit 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 & "ACM0002 - Version 17" and the VCS standard.

1.4 Summary Description of the Project

The project activity solar based power generation is a grouped project having 11 instances with one (1) small scale project activity and 10 large scale project activity with combined installed capacity of 381.5 MWh. The commissioning details of the project and their location of installation are mentioned in the table below:

PP Name	Capacity (MW)	COD	State	Project Location
Mihit Solar Power Private Ltd.	25	21-March-2016	Punjab	Kherakhurd

Mihit Solar Power Private Ltd.	25	21-March-2016	Punjab	Mankhera
Mihit Solar Power Private Ltd.	24	28-February-2016 (for 11.5 MW) 30-March-2016 (for 12.5 MW)	Punjab	Jandekalan
ACME Jaisalmer Solar Power Pvt. Ltd.	20	12-May-2016	Andhra Pradesh	Raichotti
Aarohi Solar Pvt. Ltd.	50	29-March-2016	Andhra Pradesh	Hindupur
Dayanidhi Solar Power Pvt. Ltd.	40	01-April-2016	Andhra Pradesh	Shantipuram
Niranjana Solar Energy Pvt. Ltd.	20	31-March-2016	Andhra Pradesh	Patthikonda
Vishwatma Solar Energy Pvt Ltd.	30	02-April-2016 (for 10 MW) 30-April-2016 (for 20 MW)	Andhra Pradesh	Yemmiganur
Acme Raipur Solar Power Pvt. Ltd.	30	09-January-2016 (for 23 MW) 15-March-2016 (for 7 MW)	Chattishgarh	Bagbera
Dayakara Solar Power Pvt Ltd	30	21-June-2016	Telangana	Maddur
Grahati Solar Energy Pvt Ltd	50	20-July-2016 (for 20 MW) 03-August-2016 (for 30 MW)	Telangana	Balanagar
Acme Odisha Solar Power Pvt Ltd	25	22-June-2015	Odisha	Balongir,
Eminent Solar Power Pvt Ltd.	12.5	09-February-2017	Uttarakhand	Uddham Singh Nagar

The monitoring period this VCS verification covered from 01-September-2019 to 31-December-2020 (inclusive of both dates) and the project activity is achieved 839,190 tCO₂e emission reductions during this monitoring period.

Assessment team checked the Commission of grouped 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 VERIFICATIONPROCESS

2.1 Method and Criteria

Verification Process: The project assessment is based on the “CDM validation and verification standard for project activities, Version 02.0 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+Certificationhas composed a project assessment team 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+Certificationensuring 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

A remote audit 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 03 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

A remote audit was conducted for the project activity on 28-January-2021. Remote audit was conducted due to on-going COVID-19 pandemic situation in the entire state of India. Taking into account the rules of relevant national and local authorities (local to the DOE offices as well as to locality of the site visits), World Health Organization (WHO) recommendations, policies of the DOE and other relevant travel restrictions and guidance (for example, a requirement to self-isolate upon return). Moreover, The VCS Program does not explicitly mandate site visits as part of the validation and verification process, only that VVBs must achieve a reasonable level of assurance on all validations and verifications (per Section 4.1.2 of the VCS Standard, v4.0).

The VVB has taken alternative measures to reach reasonable level of assurance and conducted remote audit through Skype/Telephone with site personal & consultant (refer section 2.3) with the PP representative. This is also in line with the COVID-19 travel guidance for projects of VERRA.

Technical details & metering/monitoring arrangement verified through onsite photographs/name plates and calibration certificates shared by PP. All the documents were cross checked to ensure conservative estimation of emission reduction.

During the remote audit, the PP representatives were questioned about the implementation of the project activity. Several topics like the verification of commissioning date of meters, the generation, recording, and monitoring of the data and the error accountability were discussed. To cross check the information provided by PP, various documents like technical specifications, commissioning certificates, PPA, JMR sheets, invoice, calibration certificates, s, etc. were also verified. The names of the persons interviewed during remote audit through MS team & telephonic interview is given below;

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Venkatesh	P	Site In-charge	28-Janaury-2021 (through video conference call)	Project Implementation, JMR & invoicing procedure, calibration, grievance mechanism, Management practices, data storage, QA/QC	Dr. Atul Takarkhede
2.	Dash	Priyabrata	Site In-charge			
3.	Kumar	Vinay	Plant Head			
4.	Rao	Eswara	Site In-charge			
5.	Sugumar	D.	Site In-charge			
6.	Reddy	Maheshwar	Site In charge			
7.	Reddy	Trinath	Site In charge			
8.	Mishra	Harendra	Site In charge			
9.	Sachan	Pankaj	Site In charge			
10.	-	Raguram				
11.	Sahu	Prakash Kumar	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: 28-January-2021 (Via video conferencing)				
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.	Punjab, Andhra Pradesh, Chattisgarh, Telengana, Odisha, Uttarakhand States, India (Through Video conference call)	28-January-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 validation 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 03 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	00	00

Areas of validation and verification findings	No. of CL	No. of CAR	No. of FAR
Description of project activity	00	04	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	07	00

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

2.5.1 Forward Action Requests

This is 5th periodic verification of the project activity and no FAR was raised from validation or 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.

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. Further, this is 5th 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 a grouped project. The project instances are observed to be meeting requirement of grouped project as per capacity and baseline defined in registered PD. No project instance added during this monitoring period. There are no deviations observed in baseline scenario of the project instance as defined in registered PD.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

During the remote audit interviews with PP representatives & plants in-charge and subsequent document verification; commissioning certificates, PPA, JMR and invoices, it was concluded that the project is implemented as per the requirement of the registered VCD 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 grouped project activity is a 381.5 MW solar power project consisting 11 project activity instances. Project locations are confirmed by the verification team during the remote audit. The plant wise location including latitudes and longitudes are confirmed below:

PP Name	MW	State	Project Location	Latitude (N)	Longitude (E)
Mihit Solar Power Private Ltd.	25	Punjab	Kherakhurd	29.66	75.26
Mihit Solar Power Private Ltd.	25	Punjab	Mankhera	29.59	75.24
Mihit Solar Power Private Ltd.	24	Punjab	Jandekalan	29.62	75.20
ACME Jaisalmer Solar Power Pvt. Ltd.	20	Andhra Pradesh	Raichotti	14.11	78.78
Aarohi Solar Pvt. Ltd.	50	Andhra Pradesh	Hindupur	13.98	77.48
Dayanidhi Solar Power Pvt. Ltd.	40	Andhra Pradesh	Shantipuram	12.88	78.38
Niranjana Solar Energy Pvt. Ltd.	20	Andhra Pradesh	Patthikonda	15.36	77.49
Vishwatma Solar Energy Pvt Ltd.	30	Andhra Pradesh	Yemmiganur	15.67	77.47
Acme Raipur Solar Power Pvt. Ltd.	30	Chattishgarh	Bagbera	21.12	82.48
Dayakara Solar Power Pvt Ltd	30	Telangana	Maddur	16.88	77.58
Grahati Solar Energy Pvt Ltd	50	Telangana	Balanagar	16.93	78.13
Acme Odisha Solar Power Pvt Ltd	25	Odisha	Balongir,	20.54	83.38
Eminent Solar Power Pvt Ltd.	12.5	Uttarakhand	Uddham Singh Nagar	29.2	79.1

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 confirm 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:

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

PP Name	Capacity (MW)	COD	Project Location	State
Mihit Solar Power Private Ltd.	25	21-March-2016	Kherakhurd	Punjab
Mihit Solar Power Private Ltd.	25	21-March-2016	Mankhera	Punjab
Mihit Solar Power Private Ltd.	24	28-February-2016 (for 11.5 MW) 30-March-2016 (for 12.5 MW)	Jandekalan	Punjab
ACME Jaisalmer Solar Power Pvt. Ltd.	20	12-May-2016	Raichotti	Andhra Pradesh
Aarohi Solar Pvt. Ltd.	50	29-March-2016	Hindupur	Andhra Pradesh
Dayanidhi Solar Power Pvt. Ltd.	40	01-April-2016	Shantipuram	Andhra Pradesh
Niranjana Solar Energy Pvt. Ltd.	20	31-March-2016	Patthikonda	Andhra Pradesh
Vishwatma Solar Energy Pvt Ltd.	30	02-April-2016 (for 10 MW) 30-April-2016 (for 20 MW)	Yemmiganur	Andhra Pradesh
Acme Raipur Solar Power Pvt. Ltd.	30	09-January-2016 (for 23 MW) 15-March-2016 (for 7 MW)	Bagbera	Chattish garh
Dayakara Solar Power Pvt Ltd	30	21-June-2016	Maddur	Telanga na
Grahati Solar Energy Pvt Ltd	50	20-July-2016 (for 20 MW) 03-August-2016 (for 30 MW)	Balanagar	Telanga na
Acme Odisha Solar Power Pvt Ltd	25	22-June-2015	Balongir,	Odisha

Eminent Solar Power Pvt Ltd.	12.5	09-February-2017	Uddham Singh Nagar	Uttrakh and
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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.

Technical details of of the 11 project activity instances

1. Mihit Solar Power Private Ltd.

a) Mihit Solar Power Private Ltd kherakhurd 25 MW

Technical detail of the equipment	Remark
Technology	Photovoltaic cell Seasonal tilt 5&25
Solar photovoltaic module	250,255,260Wp Modules of make - BYD/TELESON
No. of modules	102792
Total Number of Invertors	29 Units
Transformer numbers and KVA ratings	11 T/F & 5 T/F-5KVA&5 T/F - 4008KVA&1T/F-22500 KVA
Central inverters of nominal AC power, output KVA rating, make etc	SCHNIDER-680 KVA
Technical & Operational Lifetime	25 years

b) Mihit Solar Power Private Ltd. Mankhera 25 MW

Technical detail of the equipment	Remark
Technology	Polycrystalline modules, seasonal tilt (Oct to March-25°, April to Sep- 5°)
Solar photovoltaic module	Talesun-255Wp Talesun-260 Wp BYD-250 Wp BYD-255Wp BYD-260 Wp
No. of modules	102912
Total Number of Invertors	29
Transformer numbers and KVA ratings	Power transformer: 22.5/25 MVA (1 Nos), Aux. Trafo: 100 KVA(1 Nos), Inv. Trafo.: 4080 KVA (5 Nos) Aux Trafo. ICR: 5 KVA (5 Nos)
Central inverters of nominal AC power, output KVA rating, make etc	680 KVA Conext Core XC series

	Make:- Schneider
Technical & Operational Lifetime	25 years

c) Mihit Solar Power Private Ltd. Jhandekalan 24 MW

Technical detail of the equipment	Remark
Technology	Polycrystalline modules on Seasonal Tilt 25 degree & 5 degree.
Solar photovoltaic module	Waree China - 250wp (37915 Nos.) Waree China - 255wp (1826 Nos.) Waree China - 260wp (4563 Nos.) Waree China - 265wp (182 Nos.) Waree India - 250wp (12750 Nos.) Waree India - 255wp (24492 Nos.) Waree India - 260wp (14400 Nos.) TELSUN - 260wp (3136 Nos.)
No. of modules	99264
Total Number of Invertors	19 Units
Transformer numbers and KVA ratings	Power transformer: 25000 KVA(1 Nos)-Make: Schneider Aux. Trafo: 100 KVA(1 Nos)-Make: GTB(Ludhiana) Inv. Trafo: 4000 KVA(5 Nos)-Make: Sudhir Aux. Trafo ICR: 5KVA(5 Nos)-Make: Shivalic
Central inverters of nominal AC power, output KVA rating, make etc	1000 KW, ABB - Total 12 Nos. 1000 KW, TBEA - Total 7 Nos.
Technical & Operational Lifetime	25 years

2. ACME Jaisalmer Solar Power Pvt. Ltd., Rayachoti (20 MW)

Technical detail of the equipment	Remark
Technology	Polycrystal modules on Seasonal Tilt at 3 degrees and 15 degrees
Solar photovoltaic module	250Wp Modules of make -BYD, 255Wp Modules of make -BYD, 260Wp Modules of make -BYD, 260Wp Modules of make -Talesun
No. of modules	99096
Total Number of Invertors	20 Units
Transformer numbers and KVA ratings	4 Nos - 4MVA, 2 Nos - 2MVA, 1Nos-100KVA

Central inverters of nominal AC power, output KVA rating , make etc	1MVA-ABB - 16Nos, 1MVA - TBEA - 4 Nos.
Technical & Operational Lifetime	25 years

3. Aarohi Solar Pvt. Ltd., Hindupur (50 MW)

Technical detail of the equipment	Remark
Technology	1)Thin film - CIS technology, 2)Crystalline.
Solar photovoltaic module	Thin film-165 Wp,170 Wp Modules of make - Solar Frontier. Crystalline - 265 Wp,270 Wp TALESUN.
No. of modules	334752 No's
Total Number of Invertors	50 Units
Transformer numbers and KVA ratings	12-4MVA,1-2MVA,2-25MVA Power Trafo.
Central inverters of nominal AC power, output KVA rating , make etc	each 1 MVA ABB make inverters.
Technical & Operational Lifetime	25 years

4. Dayanidhi Solar Power Pvt. Ltd., Shanthipuram (40 MW)

Technical detail of the equipment	Remark
Technology	Poly Crystalline 3 Deg & 15 Deg (Seasonal Tilt)
Solar photovoltaic module	BYD,TALESUN(250W,255W,260W)
No. of modules	188232
Total Number of Invertors	38 No's (In operation), 3 No's (Not in Operation) using As spare
Transformer numbers and KVA ratings	20MVA(2Power Trafo's),4 MVA (9 Trafo's) & 2 MVA (1 Trafo),100KVA (2 Trafo's) Spare:-2MVA(1 Trafo),100KVA(1Trafo)
Central inverters of nominal AC power, output KVA rating , make etc	ABB:-14 No's PVS 800-57-1000KW-C TBEAA:-24NO's TBEA1000KH-M
Technical & Operational Lifetime	25 years

5. Niranjana Solar Energy Pvt. Ltd., Pathikonda (20 MW)

Technical detail of the equipment	Remark
Technology	Poly Crystalline modules on Seasonal Tilt at 3 & 15 degrees

Solar photovoltaic module	250,255&260 Wp Modules of make - BYD & Talesun
No. of modules	97872
Total Number of Invertors	20
Transformer numbers and KVA ratings	BO-15-455-1 ->2000KVA, BO-15-455-2 ->2000KVA, BO-15-454-1->4000KVA, BO-15-454-2 ->4000KVA, BO-15-454-3->4000KVA, BO-15-454-4 ->4000KVA,
Central inverters of nominal AC power, output KVA rating , make etc	Inverters -1000KW ,Make -ABB
Technical & Operational Lifetime	25 years

6. Vishwatma Solar Energy Pvt Ltd., Yemmiganur (30 MW)

Technical detail of the equipment	Remark
Technology	Polycrystalline modules silicon technology with seasonal Tilt at 3 and 15 degrees
Solar photovoltaic module	250,255 and 260 Wp Modules of make - BYD and TELESUN
No. of modules	143376
Total Number of Invertors	30 Units
Transformer numbers and KVA ratings	1 in no 30MVA,7 in no 4MVA,1 in no 2MVA and 1 in no 100KVA
Central inverters of nominal AC power, output KVA rating , make etc	1100KVA, 26 in no TBEA make and 4 in no ABB make
Technical & Operational Lifetime	25 years

7. Acme Raipur Solar Power Pvt. Ltd., Bagbera (30 MW)

Technical detail of the equipment	Remark
Technology	Thin Film-CdTe modules on variable Tilt at 5 Sep _ Apr and 21 Apr to Sep
Solar photovoltaic module	Talesun & BYD - 250,255 & 260
No. of modules	118776
Total Number of Invertors	28
Transformer numbers and KVA ratings	Main Power transformer 1 Make ABB 25/30 MVA
Central inverters of nominal AC power, output KVA rating , make etc	24 ABB 1000KW & 6 SUNGRO 630KW Inverter Transformer Raychem RPG 6 nos. – 4MVA & 1 no. -2.5MVA

Technical & Operational Lifetime	25 years
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8. Dayakara Solar Power Pvt Ltd., Maddur (30 MW)

Technical detail of the equipment	Remark
Technology	Poly Crystalline modules - Silicon technology on seasonal Tilt at 3 & 23 degrees
Solar photovoltaic module	250W, 255W`` Wp Modules of make - BYD 255W, 260W, 265`` Wp Modules of make - RISEN 260W, 265W`` Wp Modules of make - SUNTECH 255W, 260W, 265W`` Wp Modules of make TALESUN
No. of modules	1,49,256
Total Number of Invertors	30 Units
Transformer numbers and KVA ratings	30MVA - 1 No's, 4MVA- 7 No's, 2MVA- 1 No's, 100KVA - 1 No's
Central inverters of nominal AC power, output KVA rating , make etc	TMeiC - 1MW - 22 No's ABB Make - 1MW - 8 No's
Technical & Operational Lifetime	25 years

9. Grahati Solar Energy Pvt Ltd., Balanagar (50 MW)

Technical detail of the equipment	Remark
Technology	Solar Photo voltaic module modules on seasonal tilting
Solar photovoltaic module	250,255,260,265 Wp Modules of make - BYD,RISEN SUNTECH TALESUN
No. of modules	249648
Total Number of Invertors	50
Transformer numbers and KVA ratings	25MVA-2,4MVA-8,2MVA-8,1MVA-2,50KVA-2
Central inverters of nominal AC power, output KVA rating , make etc	380V 1000KW
Technical & Operational Lifetime	25 years

10. Acme Odisha Solar Power Pvt Ltd, Balongir, Odisha (25 MW)

Technical detail of the equipment	Remark
Technology	POLY CRYSTALLINE MODULE WITH SEASONAL TILTING (5,21 DEGREES)

Solar photovoltaic module	250,255 & 260 Wp module of trina solar
No. of modules	118992
Total Number of Invertors	37
Transformer numbers and KVA ratings	Inverter transformer: 9 nos (2720 KVA, 380V/11kv) + 1 nos (700 KVA, 340V/11kv) Power transformer: 1 nos (25/30 MVA, 11kv/132kv)
Central inverters of nominal AC power, output KVA rating, make etc	33 nos of schneider (680kw, output: 380V)+ 4 nos of TBEA (630 kw, output: 340V)
Technical & Operational Lifetime	25 years

11. Eminent Solar Power Pvt Ltd., Udham Singh Nagar District, Uttarakhand (12.5 MW)

Technical detail of the equipment	Remark
Technology	photovoltaic modules on Fixed Tilt at 15 degrees and 3 degrees
Solar photovoltaic module	260 Wp & 265 Wp Modules of make - Telsun
No. of modules	59256
Total Number of Invertors	12 Units
Transformer numbers and KVA ratings	2 x 4 MVA & 1 x 4.5 MVA
Central inverters of nominal AC power, output KVA rating, make etc	(380V AC, 1.1 MWp, Inverter make:- TBEA)
Technical & Operational Lifetime	25 years

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 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 02 is raised for the details of downtime/breakdown records and CAR 03

is raised for supporting evidences of project implementation and closed successfully after proper response of PP.

Assessment team confirms following during the verification remote audit:

1. Start date of the project activity is 22-June-2015 as mentioned in the registered VCS PD.
2. An undertaking letter dated 17-March-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 5th monitoring under VCS and covers the activity from 01-September-2019 to 31-December-2020 (inclusive of both dates). The project activity adopts renewable crediting period of 10 years period and can be renewed for maximum 2 times. 22-June-2015 is the start date and 21-June-2025 will be end date of the crediting period.

The GHG credits from 01-September-2019 to 31-December-2020 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 839,190 tCO₂e which is 14.07% lower than the estimated emission reductions 976,611 tCO₂e (730,457 tCO₂e/365 days x 488 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, 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. CAR 05 raised regarding on going communication with stakeholders and the same is closed after giving response by PP. Refer Annexure 2 for the detail.

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.

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 06 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:- $BE_y = EG_{facility,y} \times EF_{grid,CM,y}$ 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 and BM are sourced from the CEA CO₂ Baseline database version 11. The data Combined margin CO₂ emission factor ($EF_{grid, CM, y}$) is equal to 0.9777 tCO₂/MWh. The calculation approach was in line with the VCS PD. Values are as follows: $EF_{grid, OM, y} = 0.9941$ tCO₂/MWh $EF_{grid, BM, y} = 0.9285$ tCO₂/MWh $EF_{grid, CM, y} = 0.9777$ tCO₂/MWh Ex-post parameter: As per the registered monitoring plan and requirement of the registered methodology following parameters needs to be monitored: 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 in MWh) The net electricity supplied to the grid by the project activity is calculated as a difference of electricity exported to the grid, electricity imported from grid the grid obtained from the joint meter reading issued by the state Utility as per below equation: $EG_{facility} = EG_{export} - EG_{import}$ 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's are JMR sheets. 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
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	The net electricity supplied the grid by the project activity during the monitoring period is 858,338.04 MWh. The verification team has checked the entire monthly “JMRs” 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 $BE_y = 858,338.04 \text{ MWh} \times 0.9777 \text{ tCO}_2\text{e/MWh}$ $= 839,190 \text{ tCO}_2\text{e (round down values)}$ As per applied methodology AMS-I. D, version 18 and ACM0002, version 17.0 and the VCS PD, project emission is considered zero as the project activity involved Solar power generation. Leakage: As per applied methodology ACM0002, version 17.0 and VCS PD Leakage emissions are not considered for the project activity. Hence, ER_y = BE_y – PE_y = 839,190 – 0 = 839,190 tCO₂e (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 07 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 in Appendix 5 of this report.

	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 remote audit 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.
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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 ACME group to perform the 5th periodical verification of the "Solar Grouped project by ACME Group (EKIESL-VCS-Aug-16-01)".

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 & ACM0002 - Version 17.0

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 PD
- 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: 01-September-2019 to 31-Decemeber-2020 (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)
01-September-2019 to 31-December-2019	178,822	0	0	178,822
01-January-2020 to 31-December-2020	660,368	0	0	660,368
Total	839,190	0	0	839,190

³Rounddown values

APPENDIX 1: DOCUMENTS REVIEWED OR REFERENCED (VERIFICATION)

No.	Author	Title	References to the document	Provider
1.	NA	Commissioning certificates of the Solar plants		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 https://registry.terra.org/app/projectDetail/VCS/1580	NA	PP
5.	NA	Calibration Certificates of energy meters	NA	PP
6.	NA	MR version 01 MR version 02 MR Version 03	07-January-2021 17-March-2021 23-April-2021	PP
7.	NA	Emission reduction sheet version 01 Emission reduction sheet version 02 Emission reduction sheet version 03	07-January-2020 17-March-2021 23-April-2021	PP
8.	NA	O & M Agreement	-	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.	NA	Monthly statement- JMR & invoices for the complete monitoring period	-	PP
12.	NA	Declaration regarding no participation in other GHG program for the concerned monitoring period	17-March-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 02.0	-	UNFCCC

No.	Author	Title	References to the document	Provider
17.		Validation & previous Verification Report	-	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:04-Febrayry-2021
Description of CAR				

During review of the MR following discrepancies observed: 1. PP requested to correct monitoring period inline with the VCU history available at VERRA project webpage. 2. Section 1.1 and Section 1.6 of MR is not in line with the guidance of MR template. 3. Editorial mistakes observed provided in the commented MR. 4. Issuance history of the VCUs missing in the MR. Corrective action is sought.	
Project participant response	Date: 17-March-2021
1. Monitoring period have been revised over the latest MR and ER sheet. 2. Section 1.1 and 1.6 have been revised as per the guidance. 3. Observed editorial mistake has been revised. 4. Issuance history is not mandatory to mention in section 3.1. Issuance history is transparently mentioned by Verra over the project webpage page.	
Documentation provided by project participant	
MR V2	
DOE assessment	Date: 24-March-2021
1. PP has corrected the monitoring period i.e. from 01-September-2019 to 31-December -2020 in revised monitoring report. 2. Section 1.1 and Section 1.6 has have been updated by PP in revised monitoring report in line with the guidance of MR template. 3. PP has made editorial correction in revised MR. 4. PP has included the Issuance history in revised MR. CAR closed.	

CAR ID	02	Section no.	4.1	Date: 04-February-2021
Description of CAR				
The breakdown details of the plants are missing in the MR. Also the supporting document regarding the breakdown (plant logbook) details are not provided to the assessment team. Corrective action is sought.				
Project participant response				Date: 17-March-2021
Breakdown were very minor in nature having no impact on ER calculation. Therefore, not included in the MR.				
Documentation provided by project participant				
NA				

DOE assessment	Date: 24-March-2021
Assessment team confirms that there is no major breakdown during the current monitoring period which impact the emission reduction. Hence acceptable to VVB. CAR closed.	

CAR ID	03	Section no.	4.1	Date: 04-February-2021
Description of CAR				
During the review of documents submitted by PP, assessment team found that the following documents are missing; 1. Power Purchase agreements 2. Commissioning Certificate of Solar plants 3. Line diagram of monitoring arrangement PP is requested to submit above documents for verification.				
Project participant response				Date: 17-March-2021
1. PPA agreement is now shared. 2. Commissioning certificates is now shared. 3. Line diagram is included in section 4.3 of the revised MR				
Documentation provided by project participant				
MR V2, PPA and Commissioning Certificate				
DOE assessment				Date: 24-March-2021
1. PP has now submitted the copies of PPA of all project sites. Assessment team confirms that PPAs have been signed with the state utility for purchase of power from the project activity. 2. Commissioning certificate of Eminent Solar Power Pvt Ltd. Is still not provide by PP. 3. PP has included the line diagram of monitoring arrangement now included in Section 4.3 of revised MR. CAR open				
Project participant response				Date: 23-April-021
Commissioning certificate of Eminent Solar is being provided.				
Documentation provided by project participant				
Commissioning Certificate				

DOE assessment	Date: 03-May-2021
PP has Submitted the commissioning Certificate of Eminent Solar Power Pvt Ltd. Verification team has checked the commissioning certificates of all plants and confirmed that commissioning dates mentioned in monitoring report are correct. Thus, CAR closed.	

CAR ID	04	Section no.	4.1	Date: 04-February-2021
Description of CAR				
As per section 1.9 of the VCS MR, the project is not participated with any other GHG program. PP requested to submit supporting documents regarding the same				
Project participant response				Date: 17-March-2021
PP declaration is being provided with the submission.				
Documentation provided by project participant				
PP no double counting declaration				
DOE assessment				Date: 24-March-2021
PP has submitted the declaration dated 13/03/2021 confirming not participation in any other GHG program. CAR closed.				

CAR ID	05	Section no.	4.1	Date: 04-February-2021
Description of CAR				
PP is requested to provide supporting documents of ongoing communication with local stakeholders as per requirement of Para 3.16.3 and 3.16.4 of the VCS standard V.4.1.				
Project participant response				Date: 17-March-2021
Grievance register which are placed at the site are being submitted.				
Documentation provided by project participant				
Grievance register				
DOE assessment				Date: 24-March-2021

PP has kept visitor register cum grievance register at all the project site for ongoing communication with the stakeholders to provide their feedback on the project. PP has submitted the copies of grievances and assessment team found that there is no any grievances received during the current monitoring period.

CAR closed.

Accuracy of GHG Emission Reduction and Removal Calculations

CAR ID	o6	Section no.	4.4	Date: 04-February-2021
Description of CAR				
During the review of documents submitted by PP, assessment team found that the following documents are missing; 1. Spreadsheet (Emission reduction calculation sheet) 2. Supporting evidence of electricity supplied to grid and Invoices for cross check Corrective action is sought.				
Project participant response				Date: 17-March-2021
1. Spreadsheet is being provided. 2. Meter reading and Invoices are being submitted.				
Documentation provided by project participant				
ER sheet and the Meter reading copy and the invoices.				
DOE assessment				Date: 24-March-2021
1. PP has submitted the emission reduction calculation sheet. 2. PP has also submitted the copies of JMRs and invoices. The same have been checked by the assessment team and found that JMRs and invoices are missing for few months also export import values for few months are not consistent with the JMRs values (Refer comments in ER sheet). ER sheet is revered for corrective action. CAR opens.				
Project participant response				Date: 23-March-2021
1. Revised calculation sheet is being submitted. 2. Observation are revised in the updated ER sheet supported by the invoices and JMRs.				
Documentation provided by project participant				
Revised ER sheet and JMRs				
DOE assessment				Date: 03-May-2021

PP has now submitted the missing JMRs and Invoices and also made correction in emission reduction sheet. Verification team checked the net electricity export to the grid with the JMR values and found consistent. The net electricity export to grid and also cross checked the same with invoices.

CAR closed.

Quality of Evidence to Determine GHG Emission Reductions and Removals

CAR ID	07	Section no.	4-5	Date: 04February-2021
Description of CAR				
PP requested to submit supporting documents of electricity meters and calibration certificate for monitoring period under verification. Corrective action is sought.				
Project participant response				Date: 17-March-2021
Calibration certificates are being provided.				
Documentation provided by project participant				
Calibration certificates				
DOE assessment				Date: 24-March-2021
PP has submitted the Calibration certificate of electricity meters. However, calibration certificate of meter installed at Eminent Solar Power Pvt Ltd is still missing. PP is requested to submit the remaining calibration certificate.				
CAR open.				
Project participant response				Date: 23_march-2021
Requisite Calibration reports are being submitted.				
Documentation provided by project participant				
Calibration Reports				
DOE assessment				Date: 03-May-2021
PP has now submitted all calibration certificates of electricity meters. Verification team checked the calibration certificate of energy meters and found that meters are calibrated as per the calibration frequency mentioned in VCS PD i.e. annually. Thus CAR 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	No	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:

- 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)
GWP	Global Warming potential
PP	Project Participant

APPENDIX 5: CALIBRATION DETAILS OF THE METERS

PP Name	MW	Project Location	Main Meter serial number	Check Meter Serial Number	Stand By Meter if available	Calibration Date	Validity of calibration	Calibration Compliance
Mihit Solar Power Private Ltd.	25	Kherakhurd, Punjab	PBB48607	PBB48608	NA	06-December-2016	05-December-2021	Yes
Mihit Solar Power Private Ltd.	25	Mankhera, Punjab	PBB48603	PBB48604	NA	06-December-2016	05-December-2021	Yes
Mihit Solar Power Private Ltd.	24	Jandekalan, Punjab	PBB48610	PBB48609	PBB48611	10-December-2015	09-December-2020	Yes
						10-August-2020	09-August-2025	Yes
ACME Jaisalmer Solar Power Pvt. Ltd.	20	Raichotti, Andhra Pradesh	APX00910 & APX00913	APX00911 & APX00914	APX00912 & APX00915	26-April-2016	25-April-2021	Yes
Aarohi Solar Pvt. Ltd.	50	Hindupur, Andhra Pradesh	APX00584	APX00585	APX00586	29-December-2015	28-December-2020	Yes
						19-September-2020	18-September-2025	Yes
Dayanidhi Solar Power Pvt. Ltd.	40	Shantipuram, Andhra Pradesh	APX00604	APX00605	APX00600	28-March-2016	27-March-2021	Yes
Niranjana Solar Energy Pvt. Ltd.	20	Patthikonda, Andhra Pradesh	15196518 & 15196512	15196519 & 15196521	15196516 & 15197462	19-March-2016	18-March-2021	Yes
Vishwatma Solar Energy Pvt Ltd.	30	Yemmiganur, Andhra Pradesh	15197463	15197470	15196511	19-March-2016	18-March-2021	Yes
Acme Raipur Solar Power Pvt. Ltd.	30	Bagbera, Chhattisgarh	Old Meter MSP54469	NA	NA	07-December-2015	06-December-2020	Yes
			CSE52062	NA	NA	28-December-2019	27-December-2024	Yes

PP Name	MW	Project Location	Main Meter serial number	Check Meter Serial Number	Stand By Meter if available	Calibration Date	Validity of calibration	Calibration Compliance
Dayakara Solar Power Pvt Ltd	30	Maddur, Telangana	APX00907	APX00908	APX00909	31-May-2016	30-May-2021	Yes
Grahati Solar Energy Pvt Ltd	50	Balanagar, Telangana	APX00971	APX00972	APX00973	19-July-2016	18-July-2021	Yes
						05-September-2020	04-September-2025	Yes
Acme Odisha Solar Power Pvt Ltd	25	Balongir, Odisha	OPTO1170	OPTO1399	NA	24-June-2016	23-June-2021	Yes
Eminent Solar Power Pvt Ltd.	12.5	Uddham Singh Nagar, Uttrakhand	UKD02407	UKD02412	NA	09-February-2017	08-February-2022	Yes
						01-November-2019	01-October-2024	Yes

No delay in calibration observed for all meters as same are calibrated within stipulated frequency of once in 5 years.