



BUNDLED SOLAR PHOTOVOLTAIC PROJECT BY ACME



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^{/2/} by “ACME Cleantech Solutions Private Limited” to perform the 5th verification of the “Bundled Solar Photovoltaic Project by ACME” (VCS ID 1753)^{/4/}. The main purpose of this verification activity is to have an independent third party for the assessment of the project design, monitoring report, Emission reduction sheet to ensure a thorough assessment of the proposed project activity against the applicable VCS requirements.

The purpose of the project activities to generate electricity by the utilization of solar energy and further selling the generated electricity 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 10-February-2017 (As per earliest date of commissioning of first Solar plant was commissioned under the Project activity)^{/01/}. The monitoring period for this VCS verification is 25-September-2021 to 25-April-2022 (Inclusive of both days) and the project activity achieved 1,305,548 tCO₂e emission reductions during this monitoring period thereon displaced 1,377,912.16 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.

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 VVB 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 VVB is to identify the significant risks for the project implementation and the generation of VCU. 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 Cleantech Solutions Private Limited” to perform the 5th verification of the “Bundled Solar Photovoltaic Project by ACME” under VCS guideline Version 4.2 and VCS standard Version 4.3. The objective of this verification activity is to have an independent third party for the assessment of the project design, Monitoring Report and Emission Reduction sheet 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 ACM0002 of version 19.0 and AMS I.D version 18.0 /20/
- The project's monitoring plan is assessed against “ACM0002 of version 19.0 and AMS I.D version 18.0 /20/
- 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 4.2/¹⁰/ and standard Version 4.3/¹⁰/
- CDM validation and verification standard for project activities, Version 03.0/¹⁶/

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 (VCUs).

1.2 Scope and Criteria

The scope is defined as an independent and objective review of the Monitoring report (MR)/⁶/ prepared as per the registered joint VCS PD & MR/⁴/ and registered approved methodology ACM0002 of version 19.0 and AMS I.D version 18.0/²⁰/. 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 4.3/¹⁰/ and guideline Version 4.2/¹⁰/, including the approved baseline and monitoring methodology ACM0002 of version 19.0 and AMS I.D version 18.0/²⁰/. The verification was based on the requirements in the CDM validation and verification standard for project activities, Version 03.0/¹⁶/ and VCS program guideline Version 4.2/¹⁰/ and VCS Standard Version 4.3/¹⁰/

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. 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. The verification team has reviewed all the documents like commissioning certificates^{1/}, technical specification^{3/}, O&M practices, JMR^{11/}, invoices^{11/}, grievance register^{15/} etc.

1.3 Level of Assurance

Applus + Certification has planned and performed the verification by obtaining evidence and other information and explanations that VVB considers necessary to give reasonable assurance that reported estimated GHG emission reductions are fairly stated. All documentary evidences were checked, remote audit was conducted to arrive at a verification conclusion by the VVB.

In our opinion, the estimated GHG emissions reductions were calculated correctly on the basis of the approved baseline and monitoring methodology “ACM0002 of version 19.0 and AMS I.D version 18.0 ”^{20/} and the VCS Standard Version 4.3^{10/}

1.4 Summary Description of the Project

The project activity is a bundled solar-based power generation project. The project activity involves installation of 1,107.50 MW¹ solar projects in different states of India. The details of the SPVs for the project and their location of installation are mentioned in the table below:

Activity Instances	Village	District	State	Name of the SPVs	Capacity (MW)	Latitude	Longitude
01	Jagathiyal	Karimnagar	Telangana	Sunworld Solar Power Pvt Ltd	30	18.82203 N	79.10108 E
	Siricilla	Karimnagar	Telangana	ReNew Ranga Reddy Solar Power Pvt Ltd	30	18.30 N	78.88 E
	Annathsa gar,	Medak	Telangana	ReNew Medak Solar Energy Pvt Ltd	45	18.14 N	78.29 E
	Beeravelly	Adilabad	Telangana	ReNew Nizamabad	50	19.13 N	78.24 E

¹ ACME Rewari Solar Power Pvt Ltd (50 MW) and Acme Kurukshetra Solar Energy Pvt Ltd (50 MW) are no longer part Of grouped project activities. These SPVs are not being verified and eligible since 01-July-2020. Deviation 7 has been approved in previous verification

				Solar Energy Pvt Ltd			
AnanthaSagar	Medak	Telangana	ACME PV Powertech Private Limited (Sadashivpet)	50	17.58 N	77.89 E	
Bhongir	Nalgonda	Telangana	ACME Solar Power Technology Private Limited	50	16.80 N	78.89 E	
Bhiwadi	Kadapa	Andhra Pradesh	Athena Bhiwadi Solar Power Pvt Ltd	50	14.11 N	78.45 E	
Hisar	Kadapa	Andhra Pradesh	Athena Hisar Solar Power Private Limited	50	14.11 N	78.78 E	
Karnal	Kadapa	Andhra Pradesh	Athena Karnal Solar Power Private Limited	50	14.02 N	78.44 E	
Chitaguppa	Kaithal	Karnataka	ACME Kaithal Solar Power Private Limited	40	17.73 N	77.21 E	
Amaravati	Raichur	Karnataka	ACME Babadham Solar Power Private Limited	40	15.98979 N	76.93002 E	
Bidi	Belagavi	Karnataka	ACME Koppal Solar Energy Private Limited	40	17.21 N	76.77 E	
Malchapur	Bidar	Karnataka	ACME Vijayapura Solar Energy Pvt Ltd	40	17.91 N	77.37 E	
Bhadla	Jodhpur	Rajasthan	ACME Rewa Solar Energy Pvt Ltd	100	27.46 N	71.99 E	

	Bap, Bhadla	Jodhpur	Rajasthan	Ayana Chittorgarh Solar Energy Pvt. Ltd	250	27.35 N	72.14 E
02	Kalvasrampur	Karimnagar	Telangana	ReNew Karimnagar Solar Power Pvt Ltd	15	18.52 N	79.55 E
03	Manthini	Karimnagar	Telangana	ReNew Purvanchal Solar Power Pvt Ltd	15	18.69 N	79.62 E
04	Jangaon	Karimnagar	Telangana	ReNew Rewanchal Solar Power Pvt Ltd	15	17.80 N	79.15 E
05	Gudhur	Karimnagar	Telangana	ReNew Neemuch Solar Power Pvt Ltd	15	18.79589 N	78.63609 E
06	Nandipet	Karimnagar	Telangana	ReNew Fazilka Power Pvt Ltd (Nandipet)	15	18.86 N	78.18 E
07	Lingampet Bayampally	Nizamabad	Telangana	ReNew Narwana Solar Power Pvt Ltd (Lingampet)	15	18.27893 N	78.10435 E
08	Mallaram	Karimnagar	Telangana	ReNew Warangal Solar Power Pvt Ltd	15	18.57 N	78.86 E
09	Kailashpuri, Gadarpur	Udham Singh Nagar	Uttarakhand	Devishi Renewable Energy Pvt Ltd	12.5	29.04 N	79.22 E
10	Kailashpuri, Gadarpur	Udham Singh Nagar	Uttarakhand	Devishi Solar Power Pvt Ltd	12.5	29.06 N	79.19 E

11	Ratanpura	Udham Singh Nagar	Uttarakhand	Sunworld Energy Pvt Ltd	12.5	29.20 N	79.08 E
12	Kalwakurthy	Mehboobnagar	Telangana	Acme Yamunanagar Solar Power Pvt Ltd-1 (KOSGI)	10	16.69 N	78.42 E
13	Mothkur	Yadadri	Telangana	Acme Yamunanagar Solar Power Pvt Ltd-2 (MOTHKUR)	10	17.43 N	79.28 E
14	Kalwakurthy	Mehboobnagar	Telangana	ACME Mahbubnagar Solar Energy Pvt Ltd-2 (GODHUR)	10	16.71 N	78.47 E
15	Kalwakurthy	Mehboobnagar	Telangana	ACME Mahbubnagar Solar Energy Pvt Ltd-3 (PADMAJIWADI)	10	18.40 N	78.21 E
16	Nagaram	Peddapally	Telangana	ACME Mahbubnagar Solar Energy Pvt Ltd-1 (MANTHANI)	10	18.69 N	79.63 E

In this monitoring period from 25-September-2021 to 25-April-2022 (Inclusive of both days), the project activity has achieved 1,305,548 tCO₂e emission reductions. VVB team checked the commissioning status of the project activity with the commissioning certificates and found correct. The project is implemented as per the description in the registered joint VCS PD & MR. 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/^{16/} and “VCS standard Version 4.3/^{10/}, program guideline Version 4.2/^{10/}” 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 VVB team, the members of the VVB team carried out: -

1. A desk review of the Monitoring report/^{16/} against the registered join VCS PD & MR/^{04/} and final validation report/^{17/};
2. Remote audit;
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 VVB team, and the results from verifying the identified criteria.

Appointment of the assessment team

According to the sectoral scope / technical area and experience in the sectoral or national business environment, composed a project VVB 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+ 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 VVB team.

Name	Role	SS Coverage	TA Coverage	Financial aspect	Host country experience
Mr. Pankaj Kumar	LA/TE	YES	YES	NA	YES
Mr. Srikanth Meesa	TR	YES	YES	NA	Yes

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

Document review

The Monitoring report version 01/06/ submitted by the PP was reviewed against the approved methodology/^{20/}, registered join VCS PD & MR & MR/^{04/}, 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.

Remote Audit

A remote audit was conducted by Applus+ Certification. Audit team performed remote audit with project stakeholders to confirm selected information mentioned in monitoring report 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 05/06/ 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 VCS objectives. The two 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 VVB 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

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Jain	Anurag	PP representative	08-July-2022	Project Implementation, JMR & invoicing procedure, calibration, grievance mechanism, Management practices, data storage, QA/QC	Mr. Pankaj Kumar
2.	Babu	Mr. R	Site Person (Andhra Pradesh)			
3.	Kishore. G	Mr. Siva	Site Person (Andhra Pradesh)			
4.	Yadav	Mr. Karan	Site Person (Rajasthan)			
5.	KV	Mr. Balraj	Site Person (Andhra Pradesh)			
6.	Sahu	Mr. Vipul	EKI Energy Services Limited		GHG calculations, MR and ER preparation, Data collection, data storage, QA/QC	
7.	Reddy	Mr. Suman	Local Stakeholder (Telangana)		Local Stakeholder consultation	
8.	Rao	Mrs. Subba	Local Stakeholder (Telangana)			
9.	Raju	Mr. K.	Local Stakeholder (Telangana)			

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
10.	Babu	Mr. M Giri	Local Stakeholder (Telengana)			
11.	Vishnoi	Mr. Joga Ram	Local Stakeholder (Rajasthan)			

As referred above, the objective of the interview was to verify the following issues:

- Confirm the implementation and operation of the project in line with VCS PD & MR: the project activity is implemented as per the registered PD and there is change in capacity of the project details are mentioned in the section 3.3 of this report. However, there is no change in design of the project activity since Commissioning. Same was confirmed from Commissioning certificates, technical specifications of the solar modules, PPA, interviews with PP/Site in charge and JMR as well as invoices raised by PP towards state utility;
- Review the data flow for generating, aggregating and reporting the monitoring parameters: JMR procedures are followed at the project site in line with the state utility practice and are in line with the registered PD & MR. JMR procedure is confirmed during the interviews with PP and VVB team also checked entire monthly JMRs issued by the state utility for the project activity with the values provided in the ER sheet for the calculations of the emission reductions;
- Confirm the correct implementation of procedures for operations and data collection: during interviews with PP, it was confirmed that implementation of procedures for operations and data collection is in line with registered PD & MR. Service provider is responsible for the operations, maintenance as well as maintaining other technical data of the project activity. Performance and operation data of Solar PV module is controlled and maintained by service provider through the dedicated software and made available to the PP as & when required;

Cross-check the information provided in the MR documentation with other sources: the information provided in the MR was crosschecked with the Commissioning certificates, PPA, Calibration certificates and JMRs are issued by Statutory authority and invoices are used for cross-checking;

- Check the monitoring equipment against the requirements of the PD & MR and the approved Methodology, including Calibration, maintenance, etc.: monitoring meters are cross checked with the previous verification reports, interviews with PP, Calibration is checked with the Calibration certificates issued by State Utility authorized third parties;
- Review the calculations and assumptions used to obtain the GHG data and ER: calculation procedures and monthly generation data is checked with JMR and crosschecked with invoices;
- Identify if the quality control and quality assurance procedures are in place to prevent or correct errors or omissions in the reported parameters: during interviews with PP, it was confirmed that quality control and quality assurance procedures are in place. Metering arrangements & JMR procedure is defined and controlled by state utility and PP do not have control on it. VVB team checked all the monthly JMR values as well as crosschecked with the invoices and found that emission reductions are calculated conservatively.

Thus, to verify the implementation of project activity, onsite operation & maintenance, monitoring & management practices; VVB team has conducted remote audit and remote interviews with onsite in-charge, O&M team and also had a detail discussion with the PP representative and reviewed third party statutory documents i.e. Commissioning certificates, Power Purchase Agreement, Complete set of JMRs covering monitoring period, Invoice (for cross check of Net electricity supplied to the grid as per revised PD),breakdown log, O&M schedule, complaint/feedback register and other relevant records.

After remote interviews with concerned onsite persons, local stakeholders, document reviews & site videos/photographs submitted by PP;VVB team concluded that the project activity is implemented and operated in-line with the registered PD & MR. There is no change in the project design or operation and monitoring practices at site which can alter the applicability of meth or additionality of the project activity. In addition to the interviews with PP, VVB team have checked the Commissioning certificate, PPA and JMRs and found that the project activity is implemented as per the PD, and Monitoring report submitted by the PP for current monitoring period. From review of JMR and invoices VVB team therefore of the opinion that project is implemented as described in the registered PD & MR and there is no change in monitoring practices as well as all monitoring parameters as envisaged in the PD & MR. All the monitored values are supported by the evidences i.e., JMRs and found that information provided in the MR is in line with the submitted evidences. VVB team reviewed all the Calibration certificates and found that monitoring meters are calibrated periodical

2.4 Site Inspections

Duration of remote inspection: 08-July-2022				
No.	Activity performed on-site	Site location	Date	Team member
1.	VVB team checked the implementation of the project, Baseline emission, Emission reduction calculation, technical description of the project and Monitoring. VVB team also checked that whether the monitoring plan as described in the VCS Joint PD & MR is actually practised onsite. Also, VVB team checked any change in host country criteria which may affect the baseline of the project activity.	-	08-July-2022	Mr. Pankaj Kumar

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 05⁰⁶/ 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	02	00
Description of project activity	0	00	00

Areas of validation and verification findings	No. of CL	No. of CAR	No. of FAR
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 5th 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 activity has not participated in any other GHG programs. PP has given declaration that the project activity will not claim emission reductions in any other GHG program (i.e., CDM , GS and GCC etc) for the monitoring period claimed in VCS and avoid double counting of the emission reductions.

Verification team has also checked REC India registry and confirms that project activity is not availing any REC benefits². Moreover, also checked other GHG program i.e., CDM³, GS⁴ and GCC⁵, hence found that project is not registered under the same.

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

The following Deviations from 1 to 7 have been approved in previous verifications.

Deviation 1:

This deviation is a permanent monitoring deviation. The meter reading practice in India is upgrading to optimum level which based on robust technology and requires minimum human intervention. The deviation is for Andhra Pradesh state project having SPV name ACME Bhiwadi Solar Power Pvt Ltd, ACME Hisar Solar Power Private Limited and ACME Karnal Solar Power Private Limited but not limited to further upgradation at another states of India. This deviation is already approved in previous verifications.

The monitoring practice is updated (October 2018) and it's shifted to Deviation Settlement Mechanism (DSM) in order to more strengthen the national grid. The export and import values are omitted and no longer provided, only net export values are being provided for the invoicing to respective boards/government institutions. In DSM, PP have to forecast electrical energy generation in day time blocks (In India, 15 minutes each block, total 96 blocks) well in advance. The invoicing is done on the forecasted value. The actual generation deviation from the forecasted values is penalized, it depends upon the deviation magnitude. Therefore, instead of export and import values, the net values are directly obtained (either by including deviation to the schedule values or directly considering the actual values from the SRPC report) for the emission reduction calculation. The approach doesn't alter the emission reduction and its calculations.

For Sothern Region, Total Energy schedule and the Actual values (which is the actual Net delivered) is maintained by the Southern Regional Power Committee (SRPC) Secretariat, Central Electricity Authority, Government of India. Regional Energy Account (monthly net export) for every month in respect of Southern Region has been uploaded on the SRPC website,

² [Renewable Energy Certificate Registry of INDIA - Registered RE Generator List \(recregistryindia.nic.in\)](http://recregistryindia.nic.in)

³ <https://cdm.unfccc.int/Projects/projsearch.html>

⁴ <https://registry.goldstandard.org/projects>

⁵ https://projects.globalcarboncouncil.com/pages/submitted_projects

www.srpc.kar.nic.in. Since the document is provided by government nodal agency, therefore no any cross-checking is required.

The nature of deviation is permanent and already approved in the second verification.

Deviation 2:

Continuation of deviation 1, ACME Rewari Solar Power Pvt Ltd and ACME Kurukshetra Solar Energy Pvt Ltd, the Deviation Settlement Mechanism (DSM) is also applicable to mentioned SPVs. Therefore, instead of export and import values, the net values are directly obtained (either by including deviation to the schedule values or directly considering the actual values from the SRPC report) for the emission reduction calculation. The approach doesn't alter the emission reduction and its calculations. The nature of deviation is permanent.

Deviation 3:

The commissioning date of ACME Bhiwadi Solar Power Pvt Ltd is revised from 01-July-2018 to 05-July-2018. This was the typo error and the nature of deviation is permanent.

Deviation 4:

Mentioned SPVs geodic coordinates are corrected for better identification of over satellite. There has been no change in the design and specification of the SPVs:

Sunworld Solar Power Pvt Ltd	18.57 N	78.86 E
ACME PV Powertech Private Limited (Sadashivpet)	17.58 N	77.89 E
ACME Solar Power Technology Private Limited	16.80 N	78.89 E
ACME Bhiwadi Solar Power Pvt Ltd	14.11 N	78.45 E
ACME Hisar Solar Power Private Limited	14.11 N	78.78 E
Athena Karnal Solar Power Private Limited	14.02 N	78.44 E
Athena Babadham Solar Power Private Limited	15.9 N	76.9 E
Athena Koppal Solar Energy Private Limited	17.21 N	76.77 E
ACME Chittorgarh Solar Energy Pvt. Ltd	27.35 N	72.14 E
ACME Narwana Solar Power Pvt Ltd (Lingampet)	18.86 N	78.18 E
ACME Warangal Solar Power Pvt Ltd	18.57 N	78.86 E
Acme Yamunanagar Solar Power Pvt Ltd-1 (KOSGI)	16.69 N	78.42 E
Acme Yamunanagar Solar Power Pvt Ltd-2 (MOTHKUR)	17.43 N	79.28 E
ACME Mahbubnagar Solar Energy Pvt Ltd-2 (GODHUR)	16.71 N	78.47 E
ACME Mahbubnagar Solar Energy Pvt Ltd-3 (PADMAJIWADI)	18.40 N	78.21 E

Deviation 5:

ACME Bhiwadi Solar Power Pvt Ltd, ACME Hisar Solar Power Private Limited and ACME Karnal Solar Power Private Limited changed to Athena Bhiwadi Solar Power Pvt Ltd, Athena Hisar Solar Power Private Limited and Athena Karnal Solar Power Private Limited respectively. This is only due to the asset transfer between the ACME group and Athena group. The applicable date is 31/03/2021 on which PPA addendum took place. Athena group has been added as project proponent. The design change doesn't alter the project design, monitoring approach, additionality, emission reduction and its calculations. The nature of deviation is permanent.

Deviation 6:

In order to align the monitoring start date and end date with billing cycle, various start and end date of billing cycle has been apportioned using Daily Generation Report of respective SPVs. The apportioning is done on the basis of generation ratio (Generation ratio: DGR's generation for the period covered in the monitoring period/ DGR's Total generation for the month, the ratio is then multiplied with the export and import values). The details are provided in the emission reduction calculation spreadsheet. The design change doesn't alter the project design, monitoring approach and additionality. Through this deviation, the emission reduction and its calculations are aligned to the generation covered in the monitoring period. The nature of deviation is permanent.

Deviation 7:

ACME Rewari Solar Power Pvt Ltd and ACME Kurukshetra Solar Energy Pvt Ltd. Are not a part of the grouped project activity. These SPVs are not being verified and eligible since 01-July-2020. The design change doesn't alter the project design, monitoring approach, additionality and emission reduction calculations. The nature of deviation is permanent.

The above Deviations from 1 to 7 have been approved in previous verifications.

Deviation 1 has been approved in the second verification (Monitoring period: 01-March-2018 to 31-January-2020 (Inclusive of both days)).

Deviations 2, Deviations 3, and Deviations 4 have been approved in the third verification (Monitoring period: 01-February-2020 to 25-April-2021 (Inclusive of both days)).

Deviations 5, Deviations 6, and Deviations 7 have been approved in the fourth verification (Monitoring period: 25-April-2021 to 25-September-2021 (Inclusive of both days)).

Deviation in the current monitoring period :

Deviation 8:

An asset transfer materialized between ACME Cleantech Solutions Private Limited and ReNew Power Private Limited, ACME Cleantech Solutions Private Limited and Ayana Renewable Power Private Limited for the transfer of assets. The new and old assets owners are tabulated below. However, in the contractual agreement between new and old SPV, the rights of environmental credits holds with ACME Cleantech Solutions Private Limited. Therefore, the accession and revised communication agreement is not required. The contract has been shared with VVB. The proposed change doesn't alter the project design, monitoring approach, additionality and emission reduction calculations. The nature of deviation is permanent.

Old SPV Owners	New SPV Owners	Asset Transfer date
ACME Fazilka Power Pvt Ltd	ReNew Fazilka Power Pvt Ltd	03-Novemeber-2021
ACME Karimnagar Solar Power Pvt Ltd	ReNew Karimnagar Solar Power Pvt Ltd	03-Novemeber-2021
ACME Warangal Solar Power Pvt Ltd	ReNew Warangal Solar Power Pvt Ltd	03-Novemeber-2021

ACME Narwana Solar Power Pvt Ltd	ReNew Narwana Solar Power Pvt Ltd	03-Novemeber-2021
ACME Ranga Reddy Solar Power Pvt Ltd	ReNew Ranga Reddy Solar Power Pvt Ltd	03-Novemeber-2021
ACME Nizamabad Solar Energy Pvt Ltd	ReNew Nizamabad Solar Energy Pvt Ltd	03-Novemeber-2021
ACME Medak Solar Energy Pvt Ltd	ReNew Medak Solar Energy Pvt Ltd	03-Novemeber-2021
Purvanchal Solar Power Pvt Ltd	ReNew Purvanchal Solar Power Pvt Ltd	03-Novemeber-2021
Rewanchal Solar Power Pvt Ltd	ReNew Rewanchal Solar Power Pvt Ltd	03-Novemeber-2021
Neemuch Solar Power Pvt Ltd	ReNew Neemuch Solar Power Pvt Ltd	03-Novemeber-2021
ACME Chittorgarh Solar Energy Pvt. Ltd	Ayana Renewable Power Private Limited	18-Novemeber-2021

Deviation-9:

Few changes observed in the plant technical and specifications of equipment's mentioned in Section 3.1 Implementation status of project activity in MR. The technical configuration of the equipments are updated in Table 3 of MR. Technical specifications of the is updated due to maintenance and upgradation activity. Changes regarding the plant configuration (Inverter and module specifications) are being mentioned in **Error! Reference source not found.**

The equipment reconfigurations don't alter project capacity, design changes, calculation of emission reduction, and any impact on additionality, capacity, and PLF of the project.

The Nature of Deviation is permanent..

VVB has verified that the proposed change doesn't alter the project design, monitoring approach, additionality and emission reduction calculations. The nature of deviation is permanent.

Deviation-10:

The meters replacement/Monitoring procedure/calibration of the billing meter are completely under State electricity board of Karnataka. The monitoring procedure have been recently updated and the net electricity export have been calculated using "Export-115% Import", the same net electricity values are reflected in the crosscheck invoices. PP don't have anything to engage with metering and monitoring procedures. The meter is completely taken care of by State Electricity Board. Following SPVs are located in the state of Karnataka.

1. ACME Kaithal Solar Power Private Limited
2. ACME Babadham Solar Power Private Limited
3. ACME Koppal Solar Energy Private Limited
4. ACME Vijayapura Solar Energy Pvt Ltd

VVB has verified that the deviation does not negatively impact the conservativeness of the quantification of GHG emission reductions or removals and the deviations relate only to the criteria and procedures for monitoring or measurement, and do not relate to any other part of the methodology. The nature of this deviation is permanent.

Deviation-11

Upon calculating the additionality breaching value, few typo errors were observed in the Appendix 1: Input Parameters for Additionality Assessment for Respective Project Activities of the registered VCS Joint PD & MR i.e. Error related to sensitivity analysis values of Sunworld Solar Power Pvt Ltd and ACME Kaithal Solar Power Private Limited, had been found in the registered Joint Project description & Monitoring report, the following table was mentioned in sensitivity analysis.

- Sunworld Solar Power Pvt Ltd:

Sensitivity Analysis	Equity IRR			
Variation %	-10%	Normal	10%	Breaching Value
PLF	6.90%	4.68%	13.15%	16.55%
O&M	10.34%	4.68%	9.37%	-92.54%
Project Cost	12.65%	4.68%	7.80%	-18.29%
Tariff Rate	6.90%	4.68%	13.15%	16.55%

1)

- ACME Kaithal Solar Power Private Limited:

Sensitivity Analysis	Equity IRR			
Variation %	-10%	Normal	10%	Breaching Value
PLF	7.35%	6.87%	14.09%	14.11%
O&M	11.49%	6.87%	9.92%	-68.47%
Project Cost	13.31%	6.87%	8.42%	-17.13%
Tariff Rate	7.35%	6.87%	14.09%	14.12%

The sensitivity has been reassessed with the same values and the tables are mentioned below. The revised sheets are being submitted PP and reviewed.

- Sunworld Solar Power Pvt Ltd:
Equity IRR without CDM: 4.68%
Benchmark (Equity IRR): 15.32 %

Sensitivity Analysis	Equity IRR			
Variation %	-10%	Normal	10%	Breaching Value
PLF	2.35%	4.68%	7.22%	38.16%
O&M	5.31%	4.68%	4.03%	-177.34%
Project Cost	6.70%	4.68%	3.11%	-35.79%

Tariff Rate	2.35%	4.68%	7.22%	38.16%
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- ACME Kaithal Solar Power Private Limited:**
Equity IRR without CDM: 6.87 %
Benchmark (Equity IRR): 15.50

Sensitivity Analysis	Equity IRR			
Variation %	-10%	Normal	10%	Breaching Value
PLF	3.90%	6.87%	9.88%	26.74%
O&M	7.69%	6.87%	5.99%	-68.47%
Project Cost	9.13%	6.87%	4.89%	-17.13%
Tariff Rate	7.35%	6.87%	14.09%	26.74%

VVB has verified that the deviation does not negatively impact the conservativeness of the quantification of GHG emission reductions or removals. The deviations only correct the typo errors, and do not relate to any other part of the methodology. The Deviation doesn't alter the project design, applicability of methodology, additionality, baseline scenario, monitoring approach, and emission reduction calculations. Furthermore, VVB has also checked for other projects under this group project activity (apart from these above-mentioned projects) for such typo errors and found that no such errors are there.

The nature of deviation is permanent.

Deviation-12:

Below SPV's geodetic coordinates are corrected for better identification of site. The previously mentioned coordinates have slight typo errors. With this deviation, there has been no change in the design and specification of the SPVs. The new and old geodetic coordinates owners are tabulated below.

Name of the SPVs	Old geodetic coordinates		New geodetic coordinates	
	Latitude	Longitude	Latitude	Longitude
Sunworld Solar Power Pvt Ltd	18.57 N	78.86 E	18.82203 N	79.10108 E
ACME Babadham Solar Power Private Limited	15.9 N	76.9 E	15.98979 N	76.93002 E

ReNew Neemuch Solar Power Pvt Ltd	18.9 N	78.60 E	18.79589 N	78.63609 E
ReNew Narwana Solar Power Pvt Ltd (Lingampet)	18.86 N	78.18 E	18.27893 N	78.10435 E

VVB has verified that the deviation does not negatively impact the conservativeness of the quantification of GHG emission reductions or removals. The deviations only correct the typo errors, and do not relate to any other part of the methodology. The Deviation doesn't alter the project design, monitoring approach, and emission reduction calculations. The nature of deviation is permanent.

The above requested deviations [from deviation number 8 to deviation number 12] are found to be not impacting the additionality, Scale of emission reduction, scope and project design thus, accepted by VVB.

3.4 Grouped Project

The project is a grouped project activity. However, no any new instances added since first joint validation and verification. Therefore, demonstration of new activity eligibility criteria is not required.

4. VERIFICATION FINDINGS

4.1 Project Implementation Status

During the remote audit, it was concluded that the project is implemented as per the requirement of the registered VCS PD & MR 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 VVB team and evident from JMRs.

The grouped project activities are 1,107.50 MW Solar Power project and locations of the same are confirmed by the verification team during the remote audit. The Project activity consists of several solar PV modules installed at different states of India (Details provided in above table). SPVs involved in the project activity are the subsidiary companies of ACME Cleantech Solutions Private Limited.

Verification team confirmed from the registered joint VCS PD & MR^{/4/} and from previous verification reports^{/17/} that the location of the project activity including the coordinates is same as mentioned in the registered VCS Joint PD & MR ^{/4/}.

VVB team checked the commissioning certificate/^{1/} and confirmed that the dates of Commission for the Solar plants are correct. VVB team also confirm during remote interviews 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 & MR. The project boundary includes the electricity generation equipment at the project site, substation and the regional grid (now Indian grid). Connected substations mentioned above are verified during site visit.

VVB team also checked the technical details of the Solar plants installed onsite from documents submitted by PP and previous verification reports. The VVB 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 joint VCS joint PD & MR is implemented and thus the same is acceptable to the VVB team. All required monitoring equipment's and procedures as mentioned in the registered joint VCS PD & MR are available and implemented in an appropriate manner.

The organisational role and responsibility as mentioned in the registered joint VCS PD & MR & MR/^{4/} is followed onsite confirmed during remote audit. All the emergency preparedness as mentioned in the registered join VCS PD & MR/^{4/} is followed onsite and no discrepancies were found regarding the same. Meters are calibrated as per calibration frequency in registered VCS Joint PD & MR /^{4/}. All the emergency preparedness as mentioned in the registered VCS Joint PD & MR 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 joint PD& MR.

VVB team confirms following during the verification remote audit:

1. Start date of the project activity is 10-February-2017 as mentioned in the registered VCS PD& MR/^{4/}.

History of issuance happened for the project activity is as follows: -

S. no	Monitoring period	Verification
1	10-February-2017 to 28-February-2018	1 st Verification
2	01-March-2018 to 31-January-2020	2 nd Verification
3	01-February-2020 to 24-April-2021	3 rd verification
4	25-April-2021 to 24-September-2021	4 th Verification
5	25-September-2021 to 25-April-2022	5 th Verification (on going)

2. An undertaking letter dated 01-August-2022 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.
3. VVB team confirms that this is the 5th monitoring under VCS and covers the activity from 25-September-2021 to 25-April-2022 (inclusive of both dates). The project activity adopts renewable crediting period of 10 years period and can be renewed for maximum 2 times. 10-

February-2017 is the start date and 09-February-2027 will be end date of the crediting period^{6/}.

The GHG credits from 25-September-2021 to 25-April-2022 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”^{12/}.

4. VVB team checked and found that the Project proponent of the project activity mentioned in Section 1.3 of monitoring report is correct^{6/}:
5. VVB team also checked the details of other entity mentioned in Section 1.3 of monitoring report and found correct^{6/}.
6. The quantified emission reduction calculation for the monitoring period is correct and conservative. VVB team also compared actual VCU with the estimated VCU and found that the actual VCU is 1,305,548 tCO₂e which is 7.63% higher than the estimated emission reductions 1,212,985 tCO₂e during this monitoring period. Assessment team has checked the PLF breaching values and found that no SPV's PLF is crossing the breaching value as per approved VCS PD & MR. Thus higher PLF is not affecting the additionality of the project. More details about the same are provided below in section 4.4.

Further, in line with VCS standard version 4.3 para 3.16.1, “The project proponent must demonstrate that a project contributes to at least three SDGs by the end of the first monitoring period, and in each subsequent monitoring period.”. PP has provided SDG contribution detail achieved by project activity under table 1 of monitoring report. Same is verified by verification team via supporting documents (i.e., Employment declaration and training attendance sheet^{12/}) and found in line with the data mentioned in table 1 of final MR. thus accepted by VVB.

4.2 Safeguards

4.2.1 No Net Harm

No potential environment or socio-economic impact was found during the documents review of MR, Emission Reduction sheets 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 2013⁶. This report clearly mentioned that wind/solar power project activity operations do not result in direct air pollution, noise pollution. Moreover, also as per the Central Pollution Control Board of India notification⁷ wind/solar project falls under White Category and are practically non-polluting.

⁶ <https://smarnet.niua.org/sites/default/files/resources/report-on-developmental-impacts-of-RE.pdf>

⁷ <https://cpcb.nic.in/openpdf.php?id=TGF0ZXN0RmlsZS9MYXRlc3RfMTE4X0ZpbmFsX0RpcmVjdGlbnMucGRm>

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 has maintained grievance register/^{15/} at the site office. All the stakeholders are happy with the implementation and operation of the project activity and no negative comments received 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. 4.3/^{10/} and appropriate actions taken time to time by PP.

VVB team checked the grievance register/^{15/} provided by PP and found that local stakeholders can 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, VVB 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 Joint PD & MR, ER sheet. 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 & MR.
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 is 'Indian Grid' Formula Used: - $BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$ Where, BE_y = Baseline Emissions in year y, tCO₂ $EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr) $EF_{grid,CM,y}$ = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (t CO₂/MWh) Ex-ante parameters: The baseline emission factors i.e. $EF_{grid,OM,y}$, $EF_{grid,BM,y}$, $EF_{grid,CM,y}$, are taken ex-ante in line with the registered VCS Joint PD & MR as well as cross

	checked with the CEA database version 13 and found correct^{4/}. 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 13. The data combined margin CO₂ emission factor (EF_{grid,CM,y}) is equal to 0.9475 tCO₂/MWh. The calculation approach was in line with the VCS PD & MR. Values are as follows: EF_{grid,OM,y} = 0.9726 tCO₂/MWh EF_{grid,BM,y} = 0.8723 tCO₂/MWh EF_{grid,CM,y} = 0.9475 tCO₂/MWh <u>Ex-post parameter:</u> The verification team has checked the entire monthly Credit note/ JMR/Form B reports^{11/} from respective state electricity board for net electricity generated & supplied to the grid and crosschecked same with the invoices^{11/} raised by PP towards State Utilities for the monitoring period. EG_{PJ,y} is measured as per below calculation: EG_{PJ,y} = EG_{PJ,grid,y} or EG_{PJ,facility,I,y} (Karnataka + Uttarakhand +Rajasthan +Andhra Pradesh + Telangana) Where, EG_{PJ,grid,y} or EG_{PJ,facility,I,y} (Karnataka) = Export- 115% * Import EG_{PJ,grid,y} or EG_{PJ,facility,I,y} (Uttarakhand) = EG_{Export} - EG_{Import} EG_{PJ,grid,y} or EG_{PJ,facility,I,y} (Telangana) = EG_{Export} - EG_{Import} EG_{PJ,grid,y} or EG_{PJ,facility,I,y} (Rajasthan) = EG_{Export} - EG_{Import} EG_{PJ,grid,y} or EG_{PJ,facility,I,y} (Andhra Pradesh) = EG_{Export} - EG_{Import} All values are found correct as the ER sheet is verified with entire monthly Credit note/ JMR/Form B reports^{11/} from respective state electricity board for net electricity generated & supplied to the grid and crosschecked same with the invoices. However; PPs have apportioned the values for the whole monitoring period where dates are not matching. Apportioning procedure applied in final emission reduction sheet found inline with procedure mentioned in section 4.3 of VCS approved joint PD&MR thus accepted. The details of monitoring equipment installed at each SVP are given in appendix 05 below. 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 1,377,912.16 MWh. The verification team checked the break down log for the monitoring period^{13/} and found that no major breakdown take place during the current monitoring
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	period. During the remote audit and the feeder wise location of the Solar plants is also checked. No unforced error observed. No sampling procedure applied for monitoring of the data parameter and entire documents were checked by the VVB team to arrive at positive verification conclusions. 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^{7/}, 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 $BE_y = 1,377,912.16 \text{ MWh} \times 0.9475 \text{ tCO}_2\text{e/MWh}$ $= 1,305,548 \text{ tCO}_2\text{e (round down values)}$ As per applied methodology ACM0002, version 19.0 and AMS I.D version 18.0, the VCS Joint PD & MR, project emission is considered zero as the project activity involved Solar Power generation^{4/}. PE_y = As per ACM0002 - Version 19.0, all renewable energy power generation project activities, emissions due to the use of fossil fuels for the backup generator can be neglected. As the project activity involved Solar Power project emissions (PE_y) are taken as zero. Leakage: As per ACM0002 - Version 19.0, Leakage emissions are not considered for the project activity^{20/}. Hence, $ER_y = BE_y - PE_y$ $= 1,305,548 - 0$ $= 1,305,548 \text{ tCO}_2\text{e (round down values)}$ Verification team confirms that the monitoring has been carried out in accordance with the monitoring plan contained in the registered VCS Joint PD & MR ^{4/}. VVB team confirmed that the GHG emission reductions and removals have been quantified correctly in line with the registered VCS Joint PD & MR ^{4/}.
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	The estimated emission reduction achieved from the project activity for the current monitoring period is 1,212,985 tCO₂e based on the number of days covered during the current monitoring period which comes out to be 213 days. Whereas the actual emission reductions achieved during the current monitoring period are 1,305,548 tCO₂e. The actual ERs are 7.63% higher than the estimated VCU. Assessment checked the higher PLF achieved and their respective breaching value as per the approved VCS PD & MR and found that no SPV has crossed the breaching value. Thus, assessment concluded that there is no impact on the additionality of the project activity due to higher PLF achieved by some SPVs. Hence, accepted by assessment team.
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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. Details of meters are given in appendix 5 of this report.
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 respective State Electricity Board (SEBI) sub-stations. These electricity meters are being used by state electricity board for Share certificate statements/JMRs. These meters record several parameters including electricity exported & imported. These electricity meters are being used by state electricity board for entire monthly Credit note/ JMR/Form B reports^{/11/}. The details like make, serial number, calibration dates and due dates etc.^{/5/}. are provided in appendix 05 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 & MR i.e. The calibration frequency of meters is once in 5 years^{/5/}. No delayed calibrations were observed in the project activity for this monitoring period. Interview during remote audit with O&M personnel also confirms the same^{/5/}. 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^{/5/}. Thus, no delayed calibration is observed and thus the same is found appropriate. The monitoring plan is followed at the project sites. Thus, VVB team concluded that the evidences are sufficient to determine the GHG reductions.

	VVB team checked the calculation of estimated VCU vs. Actual VCU. As per the registered VCS PD the amount of VCUs annually is 2,078,589 tCO₂e. The days involved in present monitoring period are 213. Therefore, on pro-rata basis, the estimated VERs for the monitoring period is 1,212,985 tCO₂e. Actual VERs obtained for the monitoring period is 1,305,548 tCO₂e and thus the actual VCU is 7.63 % higher than the estimated VCU. This variation is majorly due to higher PLF which is a natural phenomenon and beyond the control of the Project Proponent. Moreover, increase in emission reduction does not affect the additionality of the project activity refer appendix 6 for details. Hence VVB confirms that increase in VCUs in this monitoring period is acceptable.
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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/^{02/} by ACME Cleantech Solutions Private Limited to perform the 5th verification of the “Bundled Solar Photovoltaic Project by ACME”.

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 joint PD and MR/^{4/} and the applied methodology ACM0002 version 19.0 and AMS I.D version 18.0/^{20/}

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. No sampling procedure applied for document verifications. The entire documents checked and verification conducted to arrive at positive verification conclusions. The verification team 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 joint VCS PD & MR/^{4/};
- the 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: 25-September-2021 to 25-April-2022 (Inclusive of both days).

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

Year	Baseline emissions or removals (tCO ₂ e) ⁸	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
25-September-2021 to 31-December-2021	552,518	0	0	552,518
01-January-2022 to 25-April-2022	753,030	0	0	753,030
Total	1,305,548 (Round down)	0	0	1,305,548

⁸Rounddown values

APPENDIX 1: DOCUMENTS REVIEWED OR REFERENCED (VERIFICATION)

No.	Author	Title	References to the document	Provider
1.	Respective State Utility	Commissioning certificates of the SPVs installed in Karnataka, Andhra Pradesh and Rajasthan, Telangana States of India.	-	PP
2.	PP	Employment Declaration and Training attendance sheet	-	PP
3.	NA	The operational lifetime of the project activity from the manufacturer (Technical specifications)	Manufacturer technical specifications	PP
4.	NA	Registered join VCS PD & MR version 02 https://registry.terra.org/app/projectDetail/VCS/1753	29-January-2019	PP
5.	Respective state authority	Calibration Certificates of energy meters	-	PP
6.	NA	MR version 01 MR version 02 MR version 03 MR version 04 MR version 05	22-June-2022 21-September-2022 07-October-2022 11-November-2022 01-December-2022	PP
7.	NA	Emission reduction sheet version 01 Emission reduction sheet version 02 Emission reduction sheet version 03	22-June-2022 21-September-2022 07-October-2022	PP
8.	PP	O & M Agreements	-	PP
9.	SPVs and state board	Power Purchase Agreements valid for 25 years from the respective date of commercial operation of projects.	-	PP
10.	NA	Tools/ guidelines used in the project activity - VCS standard Version 4.3 - VCS Program Guide 4.2 - VCS verification report template Version 4.1 - VCS MR template version 4.1	UNFCCC CDM/VCS web site	UNFCCC
11.	State Utility for JMR,	Monthly statement- JMR & invoices for the complete monitoring period	-	PP

No.	Author	Title	References to the document	Provider
	PP for invoice			
12.	PP	Declaration regarding no participation in other GHG program for the concerned monitoring period	01-August-2022	PP
13.	PP	Breakdown details for the monitoring period	-	PP
14.	PP	Employment records for plant personnel	-	PP
15.	PP	Grievance Register maintained at site	-	PP
16.	UNFCCC	CDM validation and verification standard for project activities, Version 03.0	-	UNFCCC
17.	Applus Certifications	Joint Validation and Verification report. Ref. No. 5618	Version 02 13-June-2019	
18.	KBS certifications Services Pvt. Ltd.	Previous Verification Report, Report ID: VCS.21.VER.050	28-Janurary -2022	PP
19.	UNFCCC	ACM0002 Grid-connected electricity generation from renewable sources AMS I.D Grid-connected electricity generation from renewable sources, version 18.0	Version 19.0	UNFCCC

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				
VVB assessment				Date: DD/MM/YYYY
NA				

Table 2. CL from this verification

CL ID		Section no.		Date:
Description of CL				
NA				
Project participant response				Date:
NA				
Documentation provided by project participant				
NA				
VVB assessment				Date:
NA				

Table 3. CAR from this verification:

Project Implementation Status

CAR ID	01	Section no.	4.1	Date: 11-July-2022
Description of CAR				
During review of monitoring report following inconsistencies observed: 1. Section 1.1 of monitoring report is found not in line with the VCS MR template guideline version V 4.1. Thus, corrective action sought. 2. PP requested to submit copies of technical specifications of solar panels, O&M agreement, PPA of the project activity. 3. PP has mentioned commissioning date of project activity in section 3.1 of monitoring report, however to verify the same, supporting documents are missing. PP is requested to submit the same to assessment team.				

4. Title of authorized ministry for providing indicators of sustainable development is not in line with Host country webpage. Thus, corrective action sought. 5. PP is requested to reframe the language throughout the MR as the project activity is implemented and contributing towards emission reduction. 6. In Section 1.7 of monitoring report the map showing Project location is found missing. Thus, not inline with the VCS MR template guideline version V 4.1. corrective action sought.	
Project participant response	Date: 21-September-2022
1. Section 1.1 of monitoring report is modified in-line with the VCS MR template guideline version V 4.1. 2. The copies of technical specifications of solar panels , O&M agreement, PPA of the project activity are submitted with the responses. 3. Commissioning certificates for all the sites are submitted with the responses to verification team. 4. Title of authorized ministry has been corrected in Monitoring report. 5. The language has been reframed throughout the MR. 6. Project location (Map view) has been added as per the VCS MR template guideline version V 4.1.	
Documentation provided by project participant	
1. MR V2 2. Technical Specifications 3. Commissioning certificates 4. PPA	
DOE assessment	Date: 30-September-2022
1. Section 1.1 of monitoring report version 02 dated 21-September-2022 is found not inline with the VCS MR template guideline version V 4.1. Thus, corrective action sought. 2. VVB has verified the PPAs of the project activities however VVB is unable to find the evidences for the technical specifications of the solar panels. Moreover O& M agreement is also missing in the submitted documents. PP is requested to submit the same. 3. VVB is unable to find the commissioning dates under section 3.1 of the MR version 02 dated 21-September-2021. Moreover, commissioning certificate of ACME Chittorgarh solar power plant is also missing in the submitted documents. PP is requested to submit the same. 4. VVB has verified the title of the authorised ministry and found it accurate according to the host country's website. 5. VVB has verified the language in the MR version 02 dated 21-September-2022 and found it accurate. 6. PP has submitted the MR version 02 dated 21-September-2022. VVB has verified the section 1.7 and found it accurate as per the VCS MR template guideline version V 4.1.	
CAR is open.	
Project participant response	Date: 07-October-2022
1. Section 1.1 of the revised monitoring report has been in-lined with VCS MR template guideline version V 4.1. 2. Technical specifications of the solar panels are being submitted to the verification team. PP handles all operations and maintenance internally.	

3. The commissioning dates are mentioned under section 3.1 of the MR version 03 and the commissioning certificate of ACME Chittorgarh is being provided to the verification team.	
The documentation provided by project participant	
1. Technical specifications Letter 2. Commissioning certificate of ACME Chittorgarh 3. MR V03	
DOE assessment	Date: 08-October-2022
1. PP has submitted the revised MR version 03 dated 07-October-2022. VVB upon verification found that the section 1.1 is now in line with the VCS MR template guideline version V 4.1. 2. PP has submitted the technical specifications of solar panels which have been verified by VVB. 3. PP has submitted the revised MR version 03 dated 07-October-2022. VVB upon verification found that the section 3.1 is now in line with the VCS MR template guideline version V 4.1. VVB has also verified the commissioning certificate of ACME Chittorgarh submitted by PP.	
CAR closed.	

CAR ID	02	Section no.	4.1	Date: 11-July-2022
Description of CAR				
PP is requested to submit an undertaking for no double accounting for current monitoring period and for project activity is participated in other GHG program other than VCS.				
Project participant response				Date: 21-September-2022
Undertaking Letter for no double accounting for current monitoring period is being submitted to verification team.				
Documentation provided by project participant				
1. Signed Undertaking letter				
DOE assessment				Date: 30-September-2022
PP has submitted the undertaking declaring that the project is not claiming any benefits during the current monitoring period which have been verified by VVB.				
CAR closed.				

CAR ID	03	Section no.	4.2.2	Date: 11-July-2022
Description of CAR				
PP requested to submit records for ongoing local stakeholder consultation including grievance register etc. to assessment team.				

Project participant response	Date: 21-September-2022
Grievance records are being submitted to verification team as ongoing local stakeholder consultation evidence.	
Documentation provided by project participant	
1. Grievance Registers	
DOE assessment	Date: 30-September-2022
PP has submitted grievance registers of the sites. VVB upon verification found that no major grievance had been raised.	
CAR closed.	

Accuracy of GHG Emission Reduction and Removal Calculation

CAR ID	04	Section no.	4.4	Date: 11-July-2022
Description of CAR				
1. PP requested to submit all supporting evidence of electricity supplied to grid and Invoices for cross check to assessment team. 2. PP requested to submit ER sheet for further assessment. Value of achieved emission reduction is thus reserved till submission				
Project participant response				Date: 21-September-2022
1. JMR and Invoices are submitted with the responses for crosschecking purpose. 2. Emission reduction sheet is submitted to verification team.				
Documentation provided by project participant				
1. JMR and Invoices 2. Emission reduction sheet V2				
DOE assessment				Date: 30-September-2022
1. PP ha submitted the supporting evidences of electricity supplied to the grid. However, VVB upon verification found some inconsistency in the ER sheet from the submitted documents. PP is requested to submit the revised ER sheet. 2. PP has found some inconsistency in the value of the actual emission reduction mentioned in the MR version 02 dated 21-September-2022. PP is requested to submit the revised MR.				
CAR is open				
Project participant response				Date: 07-October-2022
1. Inconsistency has been corrected in Revised ER and MR and both documents are now being submitted to the verification team. 2. Values of the actual emission reduction have been corrected in the revised MR and are now being submitted to the verification team.				
Documentation provided by project participant				

1. MR V03 2. ER V03	
DOE assessment	Date: 08-October-2022
VVB has verified the revised MR version 03 dated 07-October-2022 and the ER sheet version 03 and found the values consistent with the submitted documents. CAR closed.	

Quality of Evidence to Determine GHG Emission Reductions and Removals

CAR ID	05	Section no.	4.5	Date: 11-July-2022
Description of CAR				
In order to verify the calibration details mentioned in Appendix 1 of MR Version 1, Dated 22-June-2022, PP is requested to submit the copies of calibration certificates covering complete monitoring period to the assessment team.				
Project participant response			Date: 21-September-2022	
Calibration certificates covering current monitoring period are being submitted to verification team to verify the calibration details.				
Documentation provided by project participant				
1. Calibration certificates 2. MR V2				
DOE assessment			Date: 30-September-2022	
VVB has found some inconsistency in the MR version 02 dated 21-September-2022 related to calibration dates with respect to the calibration certificates. PP is requested to submit the revised MR. CAR is open.				
Project participant response			Date: 07-October-2022	
The Calibration date has been corrected as per calibration certificates and the revised MR is now being submitted the to verification team.				
Documentation provided by project participant				
MR V03				
DOE assessment			Date: 08-October-2022	

VVB has verified the revised MR version 03 dated 07-October-2022 mentioning calibration details and found them consistent according to the calibration certificates submitted by PP.

CAR closed.

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 VVB or outsourced entity)	Involvement in			
						Desk review	On-site inspection	Interview(s)	Verification findings
1.	Lead Auditor/Technical Expert	OR	Kumar	Mr. Pankaj	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 VVB or outsourced entity)
1.	Technical reviewer (TR) / Technical Expert (TE)	EI	Srikanth	Meesa	Applus+ Certification
2.	Approver	IR	Calle de Miguel	Agustin	Applus+ Certification

Short CVs of the Team:

- Mr. Pankaj Kumar** has done M. Sc in Environment Management from Forest Research Institute, Dehradun and B. Sc. (Hons.) in Environment & Water Management from Magadh University, Bihar, India. He has also done Post Graduate Diploma in Environmental Law from NLSIU, Bangalore. He has more than 12 years of working experience in GHG Assessments and has participated during his career in Agencies and DOEs like MITCON, Agrinergy, Carbon Check and is empanelled with Applus+ Certification since 2015 for the performance of CDM/VCS/GS project assessments. He has extensive experience in the Renewable, Waste Management and Energy Demand Scopes of UNFCCC CDM and has done more than 100 Validations and Verifications of PAs and PoAs as Lead Auditor, Technical Expert and Technical Reviewer, mainly in Asia, Africa, USA, Asia Pacific and Americas under CDM, Verified Carbon Standard, Gold Standard & Social Carbon Standard, Brazil. He is an experienced, qualified and result oriented Environment and climate change professional having 16 yrs. of relevant experience in Climate Change (Mitigation & Adaptation), Environmental Due Diligence, Disaster Risk Reduction, Climate finance, adaptation planning, capacity building, validation and verification of GHG project. He can also provide technical support for environmental investigative, remedial projects involving air, water and soil, Waste management,

EIA, Environmental Compliance, ISO 14001, OHSAS 18001, GHG accounting (ISO 14064) and Carbon foot printing. Mr. Pankaj Kumar is based in Patna, India..

2. **Mr. Srikanth Meesa** is a climate change professional with more than 15 years of experience in the fields of climate change, GHG auditing, carbon footprint assessments, water and energy audits, scope-3 emissions, net zero strategies, sustainability & ESG sectors and water and wastewater treatment sectors. He has completed his masters in Environmental Engineering & Management from I.I.T Delhi and Bachelors in Civil Engineering from Osmania University. Furthermore, he has extensive experience i.e., more than 14 years on the auditing of CDM, VERRA, GS, JCM projects of various sectoral scopes across the world. He has worked with reputed certification bodies such as TUV NORD, DNVGL, TUV SUD and LR. He also has consulting experience on sustainability reports & road-maps, stakeholder consultation and LCA studies while working at Thinkstep (Now called Sphera). Currently, he is associated with Global Green Solutionz and empanelled with Applus+ Certification to carry out GHG audits in the aforementioned schemes. Mr. Srikanth Meesa is based at Hyderabad, India. Mr. Srikanth Meesa participate as part of the Audit Team as Technical Reviewer for the assessment

APPENDIX 4: ABBREVIATIONS

Abbreviations	Full texts
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEA	Central Electricity Authority
CL	Clarification request
CM	Combined Margin
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNA	Designated National Authority
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
JMR	Joint Metering Report
PP	Project Participant
SPV	Special Purpose Vehicle
VVB	Validation and Verification body
VCU	Verified Carbon Units
VCS	Verified Carbon Standard

APPENDIX 5: CALIBRATION DETAILS

Project Instance Number	Name of the SPVs	Capacity (MW)	Main Meter Details	Check Meter Details	Calibration Date	Due date
1	Sunworld Solar Power Pvt Ltd	30	SL. No. APZ00191 Make: Secure Accuracy class: 0.2 s	SL. No. APZ00192 Make: Secure Accuracy class: 0.2 s	17-December-2019	16-December-2024
	ReNew Ranga Reddy Solar Power Pvt Ltd	30	SL. No. APZ00197 Make: Secure Accuracy class: 0.2 s	SL. No. APZ00198 Make: Secure Accuracy class: 0.2 s	29-November-2019	28-November-2024
	ReNew Medak Solar Energy Pvt Ltd	45	SL. No. APZ00188 Make: Secure Accuracy class: 0.2 s	SL. No. APZ00189 Make: Secure Accuracy class: 0.2 s	29-October-2020	28-October-2025
	ReNew Nizamabad Solar Energy Pvt Ltd	50	SL. No. APZ00194 Make: Secure Accuracy class: 0.2 s	SL. No. APZ00195 Make: Secure Accuracy class: 0.2 s	21-March-2020	20-March-2025
	ACME PV Powertech Private Limited (Sadashivpet)	50	SL. No. APZ00200 Make: Secure Accuracy class: 0.2 s	SL. No. APZ00201 Make: Secure Accuracy class: 0.2 s	19-September-2020	18-September-2025
	ACME Solar Power Technology Private Limited	50	SL. No. APZ00185 Make: Secure Accuracy class: 0.2 s	SL. No. APZ00186 Make: Secure Accuracy class: 0.2 s	09-November-2020	08-November-2025

	Athena Bhiwadi Solar Power Pvt Ltd	50	SL. No.: AT-0501-A Make: Larsen & Toubro Limited Accuracy Class: 0.2s	SL. No.: AT-0502-A Make: Larsen & Toubro Limited Accuracy Class: 0.2s	10-September-2018	09-September-2023
	Athena Hisar Solar Power Private Limited	50	SL. No. AT-0496-A Make: Larsen & Toubro Limited Accuracy Class: 0.2s	SL. No. AT-0495-A Make: Larsen & Toubro Limited Accuracy Class: 0.2s	10-September-2018	09-September-2023
	Athena Karnal Solar Power Private Limited	50	SL. No. AT-0507-A Make: Larsen & Toubro Limited Accuracy Class: 0.2s	SL. No. AT-0508-A Make: Larsen & Toubro Limited Accuracy Class: 0.2s	10-September-2018	09-September-2023
	ACME Kaithal Solar Power Private Limited	40	SL. No. 17054932 Accuracy class: 0.2 s	SL. No. 17054938 Accuracy class: 0.2 s	03-March-2018	02-March-2023
	ACME Babadham Solar Power Private Limited	40	SL. No. 16113468 Accuracy class: 0.2 s	SL. No. 17069195 Accuracy class: 0.2 s	18-August-2020	17-August-2025
	ACME Koppal Solar Energy Private Limited	40	SL. No. 17115504 Accuracy class: 0.2 s	SL. No. 17069212 Accuracy class: 0.2 s	20-July-2020	19-July-2025

	ACME Vijayapura Solar Energy Pvt Ltd	40	SL. No. 17054962 Accuracy class: 0.2 s	SL. No. 17054957 Accuracy class: 0.2 s	09-June- 2020	08-June- 2025
	ACME Rewa Solar Energy Pvt Ltd	100	SL. No. 18053541 Make: L&T Accuracy Class: 0.2s	Sl. No. 18053542 Make: L&T Accuracy Class: 0.2s	16- Septembe r-2020	15- Septemb er-2025
	Ayana Chittorgarh Solar Energy Pvt. Ltd	250	SL. No. 18053539 Make: L&T Accuracy Class: 0.2s	Sl. No. 18053540 Make: L&T Accuracy Class: 0.2s	26- Septembe r-2021	25- Septemb er-2026
2	ReNew Karimnagar Solar Power Pvt Ltd	15	SL. No. APZ00131 Make: Secure Apex 150 Accuracy class: 0.2 s	SL. No. APZ00132 Make: Secure Apex 150 Accuracy class: 0.2 s	09- January- 2021	08- January- 2026
3	ReNew Purvanchal Solar Power Pvt Ltd	15	SL. No. APZ00102 Make: Secure Accuracy class: 0.2 s	SL. No. APZ00103 Make: Secure Accuracy class: 0.2 s	16- November -2019	15- Novembe r-2024
4	ReNew Rewanchal Solar Power Pvt Ltd	15	SL. No. APZ00106 Make: Secure Accuracy class: 0.2 s	SL. No. APZ00107 Make: Secure Accuracy class: 0.2 s	05- January- 2021	04- January- 2026
5	ReNew Neemuch Solar Power Pvt Ltd	15	SL. No. APZ00111 Make: Secure Accuracy class: 0.2 s	SL. No. APZ00112 Make: Secure Accuracy class: 0.2 s	18-July- 2019	17-July- 2024

6	ReNew Fazilka Power Pvt Ltd (Nandipet)	15	SL. No. APZ00116 Make: Secure Accuracy class: 0.2 s	SL. No. APZ00117 Make: Secure Accuracy class: 0.2 s	21-June-2019	22-June-2024
7	ReNew Narwana Solar Power Pvt Ltd (Lingampet)	15	SL. No. APZ00126 Make: Secure Accuracy class: 0.2 s	SL. No. APZ00127 Make: Secure Accuracy class: 0.2 s	23-July-2020	22-July-2025
8	ReNew Warangal Solar Power Pvt Ltd	15	SL. No. APZ00121 Make: Secure Accuracy class: 0.2 s	SL. No. APZ00122 Make: Secure Accuracy class: 0.2 s	13-December-2019	12-December-2024
9	Devishi Renewable Energy Pvt Ltd	13	SL. No. UKD02401 Make: Secure Accuracy class: 0.2 s	SL. No. UKD02402 Make: Secure Accuracy class: 0.2 s	01-November-2019	31-October-2024
10	Devishi Solar Power Pvt Ltd	13	SL. No. UKD02400 Make: Secure Accuracy class: 0.2 s	SL. No. UKD02399 Make: Secure Accuracy class: 0.2 s	01-November-2019	31-October-2024
11	Sunworld Energy Pvt Ltd	13	SL. No. UKD02416 Make: Secure Accuracy class: 0.2 s	SL. No. UKD02417 Make: Secure Accuracy class: 0.2 s	10-September-2021	09-September-2026
12	ACME Yamunanagar Solar Power Pvt Ltd-1 (KOSGI)	10	SL. No. APZ00321 Make: Secure Accuracy class: 0.2 s	SL. No. APZ00322 Make: Secure Accuracy class: 0.2 s	29-May-2019	28-May-2024

13	ACME Yamunanagar Solar Power Pvt Ltd-2 (MOTHKUR)	10	SL. No. APZ00316 Make: Secure Accuracy class: 0.2 s	SL. No. APZ00317 Make: Secure Accuracy class: 0.2 s	24-August- 2020	25- August- 2025
14	ACME Mahbubnagar Solar Energy Pvt Ltd-2 (GODHUR)	10	SL. No. APZ00301 Make: Secure Accuracy class: 0.2 s	SL. No. APZ00302 Make: Secure Accuracy class: 0.2 s	16-March- 2020	15- March- 2025
15	ACME Mahbubnagar Solar Energy Pvt Ltd-3 (PADMAJIWADI)	10	SL. No. APZ00312 Make: Secure Accuracy class: 0.2 s	SL. No. APZ00313 Make: Secure Accuracy class: 0.2 s	27-July- 2020	26-July- 2025
16	ACME Mahbubnagar Solar Energy Pvt Ltd-1 (MANTHANI)	10	SL. No. APZ00306 Make: Secure Accuracy class: 0.2 s	SL. No. APZ00307 Make: Secure Accuracy class: 0.2 s	16- November -2019	15- Novembe r-2024

VVB team verified the above information with copies of calibration certificates and cross checked during remote audit. Moreover, in the registered joint PD and MR, calibration validity period mentioned is 5 years for the monitoring meters and during current monitoring period all meters are calibrated. Thus, accepted by VVB.

APPENDIX 6: PLF VARIATIONS

PLF Justification for current monitoring period					PLF Justification for the current monitoring period as per total generation of year 2021			
Observed PLF for current monitoring period	PLF at the time of Validation	PLF Variations	PLF Additionality Breaching Values as per sensitivity analysis	Additionality breached due to increased PLF	Net generation for Year 2021	Observed PLF for Year 2021	PLF Variations	Additionality breached due to increased PLF
22.73%	19.00%	19.64%	38.16%	No	56,521.39	21.51%	13.20%	No
21.06%	19.00%	10.84%	33.66%	No	Not Applicable, as these are justified with the current monitoring period.			
23.25%	19.00%	22.37%	36.90%	No				
22.46%	19.00%	18.23%	35.79%	No				
22.83%	19.00%	20.16%	30.32%	No				
22.62%	19.00%	19.07%	30.32%	No				
25.44%	19.00%	33.90%	26.18%	Yes	79,206.08	18.08%	-4.82%	No
25.03%	19.00%	31.72%	26.18%	Yes	78,605.70	17.95%	-5.54%	No
25.46%	19.00%	34.01%	26.18%	Yes	79,145.37	18.07%	-4.90%	No
24.11%	19.00%	26.92%	26.74%	Yes	80,407.66	22.95%	20.78%	No
24.26%	19.00%	27.71%	26.74%	Yes	82,888.35	23.66%	24.50%	No
24.00%	19.00%	26.32%	26.74%	No	Not Applicable, as these are justified with the current monitoring period.			
24.34%	19.00%	28.08%	26.74%	Yes	79,772.57	22.77%	19.82%	No
27.62%	23.50%	17.55%	26.58%	No	Not Applicable, as these are justified with the current monitoring period.			
26.42%	23.50%	12.41%	20.18%	No				
21.71%	22.15%	-1.97%	Not Applicable as these are small-scale project activities.					
22.88%	22.15%	3.30%						

19.19%	22.15%	-13.38%
22.82%	22.15%	3.04%
22.32%	22.15%	0.78%
22.04%	22.15%	-0.51%
22.84%	22.15%	3.13%
18.73%	20.00%	-6.36%
18.64%	20.00%	-6.79%
16.04%	20.00%	-19.82%
24.28%	22.15%	9.60%
23.37%	22.15%	5.52%
23.26%	22.15%	5.03%
25.18%	22.15%	13.69%
23.17%	22.15%	4.58%

APPENDIX 7: TECHNICAL SPECIFICATIONS

Name of the SPVs	Specifications	Old technical detail	New technical detail
ReNew Karimnagar Solar Power Pvt Ltd	Solar photovoltaic module	255,260 Wp & 265 Wp	255, 260, 265 Wp 19248, 21000, 33912
	No. of modules	74088	74160
ReNew Purvanchal Solar Power Pvt Ltd	Solar photovoltaic module	255,260 Wp & 265 Wp	255, 260, 265 13920, 31008, 30600
	No. of modules	75600	75528
ReNew Rewanchal Solar Power Pvt Ltd	Solar photovoltaic module	260 Wp & 265 Wp	260, 265, 260, 265 31320, 32376
	No. of modules	62208	63696
ReNew Neemuch Solar Power Pvt Ltd	Solar photovoltaic module	260 Wp & 265 Wp	260, 265 25896, 48048
	No. of modules	73824	73944
ReNew Fazilka Power Pvt Ltd	Solar photovoltaic module	255,260 Wp & 265	255, 260, 265 13464, 57912, 3288
	No. of modules	74640	74832
Sun World Solar Power Pvt. Ltd	Solar photovoltaic module	260 Wp & 265 Wp	260, 265, 260, 265, 265
	No. of modules	133008	148056
ReNew Ranga Reddy Solar Power Pvt Ltd	Solar photovoltaic module	260 Wp & 265 Wp	260, 265 31392, 109704
	No. of modules	141504	141096
ReNew Medak Solar Energy Pvt Ltd	Solar photovoltaic module	260,265 Wp & 270 Wp	260, 265, 265, 270, 260
	No. of modules	220176	220200
ReNew Narwana Solar Power Pvt Ltd	Solar photovoltaic module	255 Wp & 260 Wp	255, 260
	No. of modules	74544	74520

ReNew Nizamabad Solar Energy Pvt Ltd	Solar photovoltaic module	260,265 Wp & 270 Wp	260, 265, 265, 270, 255
	No. of modules	243816	243432
ACME PV Powertech Private Limited	Solar photovoltaic module	265,270 Wp & 275 Wp	270, 265, 260, 275 Watts
	No. of modules	234936	242616
Devishi Renewable Energy Pvt Ltd	Solar photovoltaic module	255Wp & 260 Wp	255, 260, 275
	No. of modules	60144	62304
Devishi Solar Power Pvt Ltd	Solar photovoltaic module	255Wp & 260 Wp	255, 260, 275, 270
	No. of modules	60144	62136
Sunworld Energy Pvt Ltd	Solar photovoltaic module	260Wp & 265 Wp	260, 265 Watts
	No. of modules	58512	58872
ACME Solar Power Technology Private Ltd	Solar photovoltaic module	265 Wp & 270 Wp	265, 270, 260
	No. of modules	216095 Installation WIP	245160
ACME Yamunanagar Solar Power Pvt Ltd-1 (KOSGI)	Solar photovoltaic module	Trina Solar (320Wp, 325Wp, 330Wp)	320, 325, 330 Watts
	No. of modules	41880	41860
ACME Yamunanagar Solar Power Pvt Ltd-2 (MOTHKUR)	Total Number of Invertors	04 Nos. (2500 kW*4)	08 Nos. 1250 kW*8)
ACME Mahbubnagar Solar Energy Pvt Ltd-2 (GODHUR)	No. of modules	39500	52368
	Total Number of Invertors	52368 No's	08
ACME Mahbubnagar Solar Energy Pvt Ltd-1 (MANTHANI)	Solar photovoltaic module	250W,260W and 265MW	265, 260 Watts
	No. of modules	51960	52368
	Transformer numbers	2 Nos.	8 Nos.
ACME Bhiwadi Solar Power Pvt Ltd	Solar photovoltaic module	315 Wp, 320 Wp, 325 Wp	315, 320,325,330,335 Watts
	No. of modules	207600	223300
ACME Kaithal Solar Power Private Limited	No. of modules	16731632	168440

ACME Karnal Solar Power Private Limited	Solar photovoltaic module	320 Wp, 325 Wp, 330 Wp	315 , 320,325,330,335 Watts
	No. of modules	206360	226440
ACME Koppal Solar Energy Private Limited	Solar photovoltaic module	315Wp,320Wp, 325Wp	320, 325
	No. of modules	168240	168700
ACME Rewa Solar Energy Pvt Ltd	Solar photovoltaic module	320 Wp, 325 Wp, 330 Wp	315, 320, 325,330 Watts
	No. of modules	400000	464760
ACME Chittorgarh Solar Energy Pvt. Ltd	Solar photovoltaic module	(320 Wp, 325 Wp, 330 Wp)	315, 320, 325,330 Watts
	No. of modules	400000	462210