



BUNDLED SOLAR PHOTOVOLTAIC PROJECT BY ACME



Document Prepared By Earthhood Services Private Limited

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Summary:

The grouped project activity by ACME Cleantech Solutions Private Limited through various SPVs involves the generation of electricity through solar photovoltaic plant with a combined capacity of 1,207.5 MW in the state of Telangana, Andhra Pradesh, Karnataka, Rajasthan and Uttarakhand, India. There is no addition of any new project instance during this verification inline with the VCS Standard Ver 04. This is a greenfield project activity and supply the generated electricity to the National power grid i.e. Indian Grid. Thus, project activity has reduced the dependence on fossil fuel-powered power plants by substituting carbon-intensive energy with the clean renewable solar energy. As per the baseline scenario, "Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants that are fossil fuel fired power plants". The baseline scenario is the same as the scenario existing prior to the implementation of the project activity.

During the Current Monitoring Period from 01-March-2018 to 31-January-2020 (First and last date included) the project activity has supplied 3,460,183.311 MWh of electricity, and thus contributing to the GHG reductions 3,278,486 tCO₂e.

PP has applied for the deviation in monitoring procedure and same have been discussed and

assessed in Section 3.3 of this report.

ACME Cleantech Solutions Private Limited contracted **ESPL** to conduct the verification of the project. The scope of verification includes confirming the implementation of the monitoring plan in the registered JOINT VCS PD & MR (Ver. 02 dated 29-January-2019) and the application of methodology ACM0002: Grid-connected electricity generation from renewable sources, Version 19.0 & AMS I.D. Grid connected renewable electricity generation, Version 18.

The verification consisted of three phases: a. Desk review of the project; b. Follow-up interviews/remote audit; c. Resolution of outstanding issues and issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted following ESPL's internal quality procedures.

A risk-based approach has been followed to perform this verification activity and No uncertainties associated with the verification. A total of 00 CL and 06 CARs have been raised during the verification process of the project activity which were successfully closed.

ESPL confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements.

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1 INTRODUCTION

1.1 Objective

“ACME Cleantech Solutions Private Limited” has contracted ESPL (Hereinafter referred as Earthood) to conduct the verification of the project activity “Bundled Solar Photovoltaic Project by ACME” according to the requirements of the Verified Carbon Standard version 4.0.

The objective of this verification is to verify and certify emission reductions reported for the PA “Bundled Solar Photovoltaic Project by ACME” for the period 01-March-2018 to 31-January-2020 (including both days).

1.2 Scope and Criteria

The scope of the verification is to establish/verify that:

- the appropriate VCS-MR form (and other templates) was used and correctly filled up; (as per <https://verra.org/wp-content/uploads/2019/09/VCS-V4-Summary-of-Effective-Dates.pdf> the use of updated version of all VCS Program templates and representations is mandatory from 19 March 2020)
- The project activity is in accordance with all relevant host country criteria (India);
- The project activity is in accordance with all relevant VCS rules and requirements;
- The project activity is in accordance with conditions of the latest version of applied methodology ACM0002: Large Consolidated methodology- Version 19.0 & AMS I.D. Grid connected renewable electricity generation, Version 18^{7/}.

The verification of the project activity is based on the JOINT VCS PD & MR and estimated GHG emission reduction calculations.

1.3 Level of Assurance

- ☒ Reasonable level of assurance
- ☐ Limited level of assurance

ESPL's verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. ESPL planned and performed the verification by obtaining evidence and other information and explanations that ESPL considers necessary to give reasonable assurance that reported estimated GHG emission reductions are fairly stated. All documentary evidences were checked, and site visit was conducted to project plant site 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 ACM0002, Version 19.0 & AMS I.D. Grid connected renewable electricity generation, Version 18 and the VCS standard, Ver 4.0.

1.4 Summary Description of the Project

The grouped project activity by ACME Cleantech Solutions Private Limited through various SPVs involves the generation of electricity through solar photovoltaic plant with a combined capacity of 1,207.5 MW in the state of Telangana, Andhra Pradesh, Karnataka, Rajasthan and Uttarakhand, India. This is a greenfield project activity and supply the generated electricity to the National power grid i.e. Indian Grid. Thus, project activity has reduced the dependence on fossil fuel-powered power plants by substituting carbon-intensive energy with the clean renewable solar energy. As per the baseline scenario, "Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants that are fossil fuel fired power plants".

There is no addition of any new project instance during this verification inline with the VCS Standard Ver 04.

The project is a voluntary action being undertaken by each project owner of the project activity. EKI Energy Services Limited (hereafter referred as "EKIESL") is acting as the other party for this project activity.

Verification team confirmed the capacity by verifying commissioning certificates^{10/} and also verified through interview during remote audit that plants are operational in all the locations (Telangana, Andhra Pradesh, Karnataka, Rajasthan and Uttarakhand). The details of interconnection with grid of solar plants and commissioning details are given in Section 4.1 of this report.

The technical specifications of solar plants confirmed with technical specifications from technology supplier and details as confirmed on skype during remote audit provided in Sec. 4.1 of this report.

These are the SPVs of ACME Cleantech Solutions Private Limited and the projects are promoted by each SPV. The electricity meters are of a precision of 0.2s. The details of meters such as make, Sr. No., calibration frequency etc. are provided in Appendix 5 of this report. The project is based on sectoral Scope 1: Energy Industries (renewable sources) with ACM0002: Grid-connected electricity generation from renewable sources, Version 19.0 & AMS I.D. Grid connected renewable electricity generation, Version 18.

During the Current Monitoring Period from 01-March-2018 to 31-January-2020 (First and last date included) the project activity has supplied 3,460,183.311 MWh of electricity, and thus contributing to the GHG reductions 3,278,486 tCO₂e.

2 VERIFICATION PROCESS

The registered VCS project is undergoing second verification and the approach adopted to ensure the quality of emission reductions is described in the following sub-sections.

2.1 Method and Criteria

The overall verification, from Contract Review to Verification Report & Opinion, was conducted using ESPL's internal procedures. The Project was verified against the latest requirements (Version 4.0) ^{/14/} and guidance set out in VCS Standards as applicable.

- The verification process consists of the following three phases;
- A document review of the JOINT VCS PD & MR and VCS MR (described in Section 2.2)
- Site visit and follow up interviews with project stakeholders (described in Section 2.3 and 2.4)
- The resolution of outstanding issues and issuance of the final report and opinion. (described in Section 2.5)

DOE's Sampling Approach: No sampling approach was required for undertaking the current verification since all monitored data was verified by the assessment team.

2.2 Document Review

The verification is performed primarily as a document review of the documents submitted at various stages of assessments. The review is performed by assessment team using dedicated protocols. The assessment team cross checks the information provided in the documents (PDD, MR, validation report) and information from sources other than those used, if available, and also conducts independent background investigations. Earthood conducted a desk review as under;

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

2.3 Interviews

A remote audit was conducted on 12-June-2020 through Skype video call which covers all the sites (includes all the locations) in the state of Uttar Pradesh, Telangana, Andhra Pradesh & Gujarat in India. No sampling procedures were adopted either in document verification and all the documents were cross checked to ensure conservative estimation of emission reduction. Remote audit conducted due to pandemic situation and technical details and metering/monitoring arrangement verified through photos/certificates shared by PP. The names of the persons interviewed during remote audit through Skype/telephonic interview^{9/} is given below;

State	Name of Persons/Designation	Topics discussed	Team Member
NA	Mr. Amit Batra, Manager	Project Implementation, Management practices, Grievance mechanism	Dr. Atul Takarkhede
NA	Mr. Navin Sharma, Manager		
Telangana	Kishore Prafulla (Site Incharge)	Project Implementation, Monitoring practices, Calibration requirements, Data collection, data storage, QA/QC	
Andhra Pradesh	Sandeep Giri (Site Incharge)		
Rajasthan	Pankaj Yadav (Site Incharge)		
EKI Energy Services Limited	Barun Sharma, GM, EKI Energy Prakash Kumar Sahu, Manager, EKI Energy Consultant	GHG calculations, MR and ER preparation	

2.4 Site Inspections

Duration of on-site inspection: NA				
No.	Activity performed on-site	Site location	Date	Team member
1.	NA	NA	NA	NA

The verification team could not perform on-site inspection due to the ongoing COVID-19 pandemic in the entire state of India. Ministry of Home Affairs (MHA), Government of India has order nationwide lockdown from 25-March-2020 to 14-April-2020^{/22/}. Further extended to 03-May-2020^{/23/} and again extended up 17-May-2020^{/24/}. MHA again extended lock down up to 31/05/2020^{/25/}. All domestic & International travel, passenger movement by trains, interstate buses for public transport, movement by individuals were prohibited till June-2020^{/25/}. The project sites and substation were not accessible in these locations due to lockdown. Further access to project site and sub-station was restricted and video call was not possible from sub-station.

Moreover, the VCS program does not explicitly mandate site visits as part of the validation and verification process during such unprecedented circumstances, 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 DOE reached reasonable level of assurance through remote verification via Skype/Telephonic interview (refer section 2.3) with the representative PP. through review of documentation/evidences such as technical layout, metering arrangements/specification of solar power Plants, logbook^{/26/}/monthly generation data/ photographs^{/20/} and name plates of solar power plants, calibration certificates of meters, validation and verification report^{/21/} of various issuance.

A remote audit was conducted by the assessment team (Dr. Atul Takarkhede) on 12-June-2020 to carry out the following;

- An assessment of the implementation and operation of the registered project activity as per the registered PD or any approved revised PD^{/1/} and MR^{/2/};
- A review of information flow for generating, aggregating and reporting the monitoring parameters;
- Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the PD;
- A cross-check between information provided in the monitoring report and data from other sources such as JMR sheets, invoice slips, PPA agreement etc.;
- A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PD^{/1/}, the applied methodology including applicable tool(s), and, where applicable, the applied standardized baseline;
- A review of calculations and assumptions made in determining the GHG data and emission reductions;

- g. An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

2.5 Resolution of Findings

The findings may be of the following types: CAR- Corrective Action Request, CL- Clarification Request and FAR- Forward Action Request.

The list of findings and their resolution are presented in Appendix 2 of this verification report. The section also includes the response, if provided, by the project participants and an assessment by the assessment team if it was closed or otherwise. It is to be noted that all the findings have been satisfactorily resolved by the assessment team.

A total of 06 CAR and 00 CL were raised in the current verification. All the findings that are raised and communicated to project participant during the verification are included under Appendix 2. The section also includes the response, if provided, by the project participants and an assessment by the verification team if it was closed out or otherwise

2.5.1 Forward Action Requests

This is 2nd periodic verification of the project activity and no FAR is raised during current verification and no FAR from validation/previous verification as well.

2.6 Eligibility for Validation Activities

As project is already validated and this is 2nd verification of the project. Hence, this section is not applicable.

3 VALIDATION FINDINGS

As project is already validated and this is 2nd verification of the project. Hence, this section not applicable

3.1 Participation under Other GHG Programs

This section is not applicable for present verification. Same was also verified from the UNFCCC CDM website, VERRA project database and REC registry of India.

3.2 Methodology Deviations

No methodology deviation is envisaged for present verification.

3.3 Project Description Deviations

PP have sought following deviation for monitoring of the project activity.

The meter reading procedure is completely under the control of the State Utility/SECI. The monitoring practice is updated from October 2018 and it's shifted to Deviation Settlement Mechanism (DSM) in order to more strengthening of the national grid. 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. Thus, as per the Regional Power Committee, Central Electricity Authority (CEA) practices & discretion, the export and import values are not provided in the monthly Regional Energy Account (REA) statement rather, only forecast values and net export and/or deviation values are being provided for the invoicing to respective boards/government institutions. Further, the actual generation deviation from the forecasted values is penalized, depending upon the deviation magnitude and PPA. Thus, the net export value is 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 change in source of net electricity value does not have any impact on the calculation of the emission reduction calculations.

Currently in this monitoring period, the deviation is sought for projects located in Andhra Pradesh i.e. ACME Bhiwadi Solar Power Pvt Ltd, ACME Hisar Solar Power Private Limited and ACME Karnal Solar Power Private Limited but this mechanism may be further followed at other states of India as per the discretion of CEA.

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 the every month in respect of Southern Region has been uploaded on the SRPC website, www.srpc.kar.nic.in. Since the document is provided by government nodal agency which is apex body of Government of India, therefore no any cross-checking of net electricity exported required.

The deviation is inline with the site practices and PP do not have control on the meter reading procedures by statutory agencies. Further, this deviation do not have any impact on emission reduction calculations and hence accepted by assessment team.

3.4 Grouped Project

This is a grouped project. However, there is no addition of any new project instance during this verification inline with the VCS Standard Ver 04/¹⁴/.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

During the remote verification audit was concluded that the project is implemented as per the instruction of the registered VCS PD^{/1/}, and this is verified from the commissioning certificates^{/10/}. During the current monitoring period it was observed that no unforeseen situation evolved which can impact the operation of the project activity. Breakdown summary is submitted by PP for the solar plants^{/26/}. Scheduled maintenance was carried out as per the instruction of the manufacturer and the same is acceptable to the assessment team^{/9/}.

The grouped project activity by ACME Cleantech Solutions Private Limited through various SPVs involves the generation of electricity through solar photovoltaic plant with a combined capacity of 1,207.5 MW in the state of Telangana, Andhra Pradesh, Karnataka, Rajasthan and Uttarakhand, India^{/10/}. There is no addition of any new project instance during this verification^{/1/} /2/ inline with the VCS Standard Ver 04^{/14/}. The technical parameters/specification have been verified by the assessment team through interview with site personal during the remote audit^{/09/} with the nameplates as well as the same is also verified with the details as provided by the manufacturer^{/18/}. The details of interconnection with grid of solar plants and commissioning details^{/10/} are given below;

PA Instance	SPV Name	State	Capacity (MW)	Date of Commissioning
1	Sunworld Solar Power Pvt Ltd	Telangana	30	15-November-2017
	ACME Ranga Reddy Solar Power Pvt Ltd		30	02-June-2017
	ACME Medak Solar Energy Pvt Ltd		45	14-July-2017
	ACME Nizamabad Solar Energy Pvt Ltd		50	11-Septmeber-2017
	ACME PV Powertech Private Limited (Sadashivpet)		50	07-July-2017
	ACME Solar Power Technology Private Limited		50	05-February-2018
	ACME Rewari Solar Power Pvt Ltd	Karnataka	50	31-January-2018
	Acme Kurukshetra Solar Energy Pvt Ltd		50	31-January-2018
	ACME Bhiwadi Solar Power Pvt Ltd	AP	50	01-July-2018
	ACME Hisar Solar Power Private Limited		50	21-June-2018
	ACME Karnal Solar Power Private Limited		50	15-June-2018

PA Instance	SPV Name	State	Capacity (MW)	Date of Commissioning
	ACME Kaithal Solar Power Private Limited	Karnataka	40	24-January-2018
	ACME Babadham Solar Power Private Limited		40	22-January-2018
	ACME Koppal Solar Energy Private Limited		40	15-April-2018
	ACME Vijayapura Solar Energy Pvt Ltd		40	23-January-2018
	ACME Rewa Solar Energy Pvt Ltd	Rajasthan	100	24-September-2018
	ACME Chittorgarh Solar Energy Pvt. Ltd	Rajasthan	250	26-October-2019
2	ACME Karimnagar Solar Power Pvt Ltd	Telangana	15	02-March-2017
3	Purvanchal Solar Power Pvt Ltd		15	23-February-2017
4	Rewanchal Solar Power Pvt Ltd		15	24-March-2017
5	Neemuch Solar Power Pvt Ltd		15	25-March-2017
6	ACME Fazilka Power Pvt Ltd (Nandipet)		15	13-March-2017
7	ACME Narwana Solar Power Pvt Ltd (Lingampet)		15	24-February-2017
8	ACME Warangal Solar Power Pvt Ltd		15	03-March-2017
9	Devishi Renewable Energy Pvt Ltd	Uttarakhand	12.5	19-February-2017
10	Devishi Solar Power Pvt Ltd		12.5	19-February-2017
11	Sunworld Energy Pvt Ltd		12.5	10-February-2017
12	ACME Yamunanagar Solar Power Pvt Ltd-1 (KOSGI)	Telangana	10	26-September-2017
13	ACME Yamunanagar Solar Power Pvt Ltd-2 (MOTHKUR)		10	17- September-2017
14	ACME Mahbubnagar Solar Energy Pvt Ltd-2 (GODHUR)		10	11- September-2017
15	ACME Mahbubnagar Solar Energy Pvt Ltd-3 (PADMAJIWADI)		10	09- September-2017
16	ACME Mahbubnagar Solar Energy Pvt Ltd-		10	12- September-2017

PA Instance	SPV Name	State	Capacity (MW)	Date of Commissioning
	1 (MANTHANI)			
Total			1,207.5	

The assessment team interviewed remotely with the plant site personals in order to verify the status of the project implementation of the monitoring plan. It has also been verified as per the guidelines in ACM0002: Grid-connected electricity generation from renewable sources, Version 19.0 & AMS I.D. Grid connected renewable electricity generation, Version 18 that the calculations for the GHG emission reductions are done in accordance with the aforesaid methodology^{7/}.

The assessment team also confirmed that the monitoring system for emission reduction calculation was in place and in accordance with the registered VCS PD^{1/}.

During the current monitoring duration, no events have been found that can change the design of project^{9/}.

The details of the SPVs for the project and their location of installation are mentioned in the table below:

Activity Instances	Location	Name of the SPVs	Latitude	Longitude
01	Jagathiyal village, Karimnagar Dist., Telangana	Sunworld Solar Power Pvt Ltd	18.57 N	78.86 E
	Siricilla village, Karimnagar, Telangana	ACME Ranga Reddy Solar Power Pvt Ltd	18.30 N	78.88 E
	Annathsagar village, Medak, Telangana	ACME Medak Solar Energy Pvt Ltd	18.14 N	78.29 E
	Beeravelly village, Adilabad, Telangana	ACME Nizamabad Solar Energy Pvt Ltd	19.13 N	78.24 E
	AnanthaSagar village, Medak, Telangana	ACME PV Powertech Private Limited (Sadashivpet)	17.58 N	77.89 E
	Bhongir village, Nalgonda, Telangana	ACME Solar Power Technology Private Limited	16.80 N	78.89 E

Activity Instances	Location	Name of the SPVs	Latitude	Longitude
	Pavgada village, Tumkur, Karnataka	Acme Rewari Solar Power Pvt Ltd	14.26 N	77.48 E
	Pavgada village, Tumkur, Karnataka	Acme Kurukshetra Solar Energy Pvt Ltd	14.25 N	77.47 E
	Bhiwadi village, Kadapa, Andhra Pradesh	ACME Bhiwadi Solar Power Pvt Ltd	14.11 N	78.45 E
	Hisar village, Kadapa, Andhra Pradesh	ACME Hisar Solar Power Private Limited	14.10 N	78.78 E
	Karnal village, Kadapa, Andhra Pradesh	ACME Karnal Solar Power Private Limited	14.02 N	78. 44 E
	Chitaguppa village, Kaithal, Karnataka	ACME Kaithal Solar Power Private Limited	17.73 N	77.21 E
	Amaravati village, Raichur, Karnataka	ACME Babadham Solar Power Private Limited	15.93 N	76.55 E
	Bidi, Belagavi, Karnataka	ACME Koppal Solar Energy Private Limited	17.21 N	76.46 E
	Malchapur village, Bidar, Karnataka	ACME Vijayapura Solar Energy Pvt Ltd	17.91 N	77.37 E
	Bhadla village, Jodhpur, Rajasthan	ACME Rewa Solar Energy Pvt Ltd	27.46 N	71.99 E
	Bap, Bhadla, Jodhpur, Rajasthan	ACME Chittorgarh Solar Energy Pvt. Ltd	27.35 N	72.14 E
02	Kalvasrampur village, Karimnagar, Telangana	ACME Karimnagar Solar Power Pvt Ltd	18.52 N	79.55 E
03	Manthini village, Karimnagar, Telangana	Purvanchal Solar Power Pvt Ltd	18.69 N	79.62 E
04	Jangaon village, Karimnagar, Telangana	Rewanchal Solar Power Pvt Ltd	17.80 N	79.15 E
05	Gudhur, village, Karimnagar, Telangana	Neemuch Solar Power Pvt Ltd	18.9 N	78.60 E

Activity Instances	Location	Name of the SPVs	Latitude	Longitude
06	Nandipet, Karimnagar, Telangana	ACME Fazilka Power Pvt Ltd (Nandipet)	18.86 N	78.18 E
07	Lingampet Bayampally, Nizamabad, Telangana	ACME Narwana Solar Power Pvt Ltd (Lingampet)	18.86 N	78.18 E
08	Mallaram, Karimnagar, Telangana	ACME Warangal Solar Power Pvt Ltd	18.57 N	78.86 E
09	Kailashpuri, Gadarpur Udham Singh Nagar, Uttarakhand	Devishi Renewable Energy Pvt Ltd	29.04 N	79.22 E
10	Kailashpuri, Gadarpur Udham Singh Nagar, Uttarakhand	Devishi Solar Power Pvt Ltd	29.06 N	79.19 E
11	Ratanpura, Udham Singh Nagar, Uttarakhand	Sunworld Energy Pvt Ltd	29.20 N	79.08 E
12	Kalwakurthy, Mehboobnagar, Telangana	Acme Yamunanagar Solar Power Pvt Ltd-1 (KOSGI)	16.69 N	78.42 E
13	Mothkur, Yadadri, Telangana	Acme Yamunanagar Solar Power Pvt Ltd-2 (MOTHKUR)	17.43 N	79.28 E
14	Kalwakurthy, Mehboobnagar, Telangana	ACME Mahbubnagar Solar Energy Pvt Ltd-2 (GODHUR)	16.71 N	78.6 47 E
15	Kalwakurthy, Mehboobnagar, Telangana	ACME Mahbubnagar Solar Energy Pvt Ltd-3 (PADMAJIWADI)	18.40 N	78.21 E
16	Nagaram, Peddapally, Telangana	ACME Mahbubnagar Solar Energy Pvt Ltd-1 (MANTHANI)	18.68 N	79.62 E

These are the SPVs promoted by M/s. ACME Cleantech Solutions Private Limited.

Capacity of the projects and date of commissioning verified with commissioning certificates/^{10/} and technical specifications provided by technology supplier/^{18/}

Geo coordinates were checked on the google earth/^{17/} and also checked through site photographs share by PP and verification team concluded that the geo coordinates of project locations are consistent with registered PD.

Assessment team checked the technical details of the project activity from the manufactures specification and found correct/^{4/}, /^{18/}.

Assessment team concludes the following:

- a) The implementation status of project activity was found to be in compliance with registered PD/^{1/}.
- b) DOE has conducted the remote audit to confirm the implementation status of the project/^{9/}.
- c) The commissioning date of the project activity was found to be accurately and consistently recorded/^{10/}.
- d) The actual operation of project activity was found to be in compliance with the flow diagram provided in registered PD/^{1/}.
- e) The emission reductions achieved during the current monitoring period are 3,278,486 tCO₂e.

The project activity contributes to the sustainable development by utilising solar energy for generating electricity which otherwise would have been generated through fossil fuels. Thereby reduction in usage of non-renewable sources used to generate energy.

Further the GHG emission reductions generated by the project activity has not been included by any other an emissions trading program or any other mechanism that includes GHG allowance trading. Also, the project has not received any other form of environmental credit and has not been participated/rejected under any other GHG programs.

Sustainable Development- The project will contribute to the sustainable development in the following ways:

1. Environmental: Since the project activity leads to cleaner production of energy, it is leading to displacement of fossil fuel-based energy.
2. Social: Setting up of the project activity has created new job openings hence is supporting employment of the local people around.
3. Cleaner Air: Since the project activity leads to lesser GHG emission it results in better air quality

Further the project has been implemented as described in the Project Description/^{14/}. CAR 03, CAR 04, CAR 05 and CAR 06 were raised and same were resolved by revision in the MR. details are provided in Appendix 2 of this report.

The total emission reductions achieved in this monitoring period i.e. from 01-March-2018 to 31-January-2020 (including both days) are 3,278,486 tCO₂e.

4.2 Safeguards

4.2.1 No Net Harm

As PP does not see and identify any potential negative environmental and socio-economic impacts, hence this section is not required.

4.2.2 Local Stakeholder Consultation

Local stakeholder consultation has been conducted at the time of project registration hence not applicable in the current monitoring period. However, PP has kept a dedicated visitor cum grievance registers at the project sites which is accessible to stakeholders to provide their feedback on the project as an ongoing communication with local stakeholders. PP has also provided an email id; info@acme.in where suggestion and the grievance can be submitted. This is in compliance with the requirement of para 3.16.4 of VCS standard, Ver 4.0. Assessment team has checked the grievances register and confirms that there are no any grievances received during the current monitoring period^{28/}.

4.3 AFOLU-Specific Safeguards

This is non AFOLU projects, hence this section not applicable.

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 MR. 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 MR.
Findings	CAR 08 was raised during the verification process and closed successfully. Refer Appendix 2 of this report for the detail closure of the CAR.
Conclusion	Ex-ante Parameter: EF_{grid,OM,y} = Parameter is fixed ex-ante for the entire crediting period and as per the validated JOINT VCS PD & MR same is fixed 0.9726 tCO₂/MWh. Verification team found same was used in the ER calculations. Ex ante value of emission factor is taken from CEA database, Ver. 13, June, 2018. Verification team checked the EF value and found in consistent with registered PD EF_{grid,BM,y} = Parameter is fixed ex-ante for the entire crediting period and as per the validated JOINT VCS PD & MR same is fixed 0.8723 tCO₂/MWh. Verification team found same was used in the ER calculations. Ex ante value of emission factor is taken from CEA database, Ver. 13, June, 2018. Verification team checked the EF value and found in consistent with registered PD EF_{grid,CM,y} = Parameter is fixed ex-ante for the entire crediting period and as per the validated JOINT VCS PD & MR same is fixed 0.9475 tCO₂/MWh. Verification team

	found same was used in the ER calculations. Ex ante value of emission factor is taken from CEA database, Ver. 13, June, 2018. Verification team checked the EF value and found in consistent with registered PD/^{1/}. 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 (t CO₂/yr) $EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr) $EF_{grid,CM,y}$ = Combined margin 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) Thus $BE_y = 3,460,183.311 \times 0.9475$ $= 3,278,486 \text{ tCO}_2\text{e (round down values)}$ Monitored Parameter: $EG_{PJ,y} = 3,460,183.311 \text{ MWh}$ The parameter is monitored through the bi-directional energy meters (main and check) installed at the Switchyard/State Electricity Board (SEB) substation as per the PPA/State electricity board requirements with accuracy class of 0.2s. The verification team has checked the entire monthly JMR reports/^{06/} for net electricity generated & supplied to the grid and crosschecked same with the invoices/^{05/} raised by PP towards State Utilities for the monitoring period. All values are found correct/^{3/}. All the parameters are monitored and recorded as per the monitoring plan in the MR/^{1/}. However, PPs have apportioned the values for the first and last month of the monitoring period where dates are not matching with JMR cycle. Apportioning found appropriate and conservative/^{3/}. PP have applied for the monitoring deviation due to application of Deviation Settlement Mechanism (DSM) for the 3 SPVs located in Andhra Pradesh/^{2/}. The same have been accepted by the assessment team and detailed assessment is provided in Section 3.3 of this report above. The verification team has crosschecked the revised emission reduction sheet and monitoring report data with the JMR sheet and invoice and found all the values are
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	matching. PE_y = As per approved joint PD & MR and ACM0002 - Version 19.0 & AMS I.D. Grid connected renewable electricity generation, Version 18, 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 wind power project emissions (PE_y) are taken as zero^{/1/}. Leakage: As per approved joint PD & MR and ACM0002 - Version 19.0 & AMS I.D. Grid connected renewable electricity generation, Version 18, Leakage emissions are not considered for the project activity^{/1/}.
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4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

Means of verification	The verification team checked the break down log for the monitoring period^{/26/}. During the remote verification audit and the feeder wise location of the solar plants is also checked. The metering arrangement is bi-directional energy meters (main and check) at the Switchyard/State Electricity Board (SEB) substation. These meters record parameters including electricity exported & imported^{/6/}. Moreover, the meters are located at the HT side of the transformer and are of accuracy class of 0.2s for project activity applied for verification^{/20/}. These electricity meters are being used by state electricity board for JMR (Joint Meter Reading)/credit note electricity generation statements. The Net electricity supplied to the grid is then calculated from export and import values. The net electricity exported to the grid is also cross checked from the invoices raised to respective state electricity board which is in line with Methodology requirement for large scale project activity^{/5/}. The main meter reading is taken jointly on a fixed day of every month for the preceding month at the delivery point and signed by the representatives of state utility and O&M personnel^{/9/}. In the event of failure of main meter, the check meter is used in monitoring the electricity data. The agency is experienced in the monitoring system and is managing O&M of numerous other solar farm projects. Verification team confirms the metering process by interviewing the O&M personnel and PP representatives during remote audit and found the monitoring process is in line with approved PD^{/1/}. Calibration of all the meters is done by state electricity board officials as per the industry standards^{/9/}. The calibration is done once in a 5 year^{/19/} as per calibration frequency in registered VCD PD^{/1/}. The details of Calibration of the meters as confirmed from previous joint validation & verification and during remote verification audit and calibration details are mentioned in Appendix 5 of this report^{/4/}. Pre-calibrated energy meters were installed during the commissioning of the project activity and valid for 5 years^{/1/}. The assessment team checked the same and found correct^{/10/}. The energy meter recording the export and import from the grid at substation is under the control and supervision of state electricity board officials. Similarly, O&M contractor is responsible for monitoring of the generation data at CMS^{/9/}. PP representatives confirmed that the CMS data as well as JMR sheets and
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	invoices will be kept for 2 years following the end of the crediting period^{/1/}. During site visit and discussion with PP, assessment team confirm that the data will be kept for 2 years following the end of the crediting period^{/9/}. The responsibilities and authorities of project management, data handling and recording, measurement methods and QA/QC procedure have been systematically established and formalized and the same was verified during the document review and by interviewing O&M personnel and checking of records/ log books maintained at site^{/9/}.
Findings	No finding was raised on the section.
Conclusion	The assessment team confirms that the value of net electricity exported to the grid as used in emission reduction calculation is correct^{/3/}. The verification team therefore is of the opinion that the project participant through the O&M agency is capable of implementing the monitoring plan in the context of the project activity. Interview with O&M personnel during remote verification audit also confirms that the operational and organizational chart as mentioned in MR is as per the site practice and thus assessment team confirms that the details are correct^{/9/}. The break down log^{/26/} is checked and found that the solar panels undergone scheduled maintenance as per the guideline provided by the manufacturer which is acceptable to the assessment team. No unforeseen incident observed during the monitoring period which could alter the applicability of the methodology or change in project specification as mentioned in the registered PDD^{/6/./26/}. The project undergone Continuous operation from the inception/commissioning and the same is confirmed from the JMR reports and invoices raised for the said period of verification PDD^{/6/./5/}. Comparison of actual and estimate emission reductions achieved: Assessment team checked the calculation of estimated VER vs. Actual VER. As per the registered JOINT VCS PD & MR the amount of VERs annually is 2,078,589 tCO₂e^{/1/}. The days involved in present monitoring period are 702. Therefore, on pro-rata basis, the estimated VERs for the monitoring period is 3,997,725 tCO₂e. Actual VERs obtained for the monitoring period is 3,278,486 tCO₂e and thus the actual VER is 17.99% lower than the estimated VER. This variation is majorly due to the variations in availability of sunny days, climatic conditions, grid availability and other parameters which are not in the control of PP^{/6/./9/}. Hence verification team confirms that decrease in VER by 17.99% in this monitoring period is acceptable.

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

Earthood Services Private Limited (Earthood), contracted by ACME Cleantech Solutions Private Limited, has performed the independent verification of the emission reductions for the VCS project activity reference number 1753“ Bundled Solar Photovoltaic Project by ACME” in India for the monitoring period 01-March-2018 to 31-January-2020 (inclusive both days) reported in the Monitoring Report Version 02 dated 21-September-2020.

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

Earthood commenced the verification on the basis of the baseline and monitoring methodology “ACM0002 - Version 19.0 & AMS I.D. Grid connected renewable electricity generation, Version 18», the monitoring plan contained in the PD version 03 and VCS guidelines version 4.0, Monitoring Report Version 02 dated 21-September-2020 as per the process described under Section 2 of this report.

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

In our opinion the GHG emissions reductions reported for the project activity for the period 01-March-2018 to 31-January-2020 are fairly stated in the Monitoring Report Version 02 dated 21-September-2020. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology “ACM0002 - Version 19.0 & AMS I.D. Grid connected renewable electricity generation, Version 18” and the VCS standard.

Verification period: 01-March-2018 to 31-January-2020 (inclusive of both days).

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

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
01-March-2018 to 31-December-2018	1,223,331	0	0	1,223,331

01-January-2019 to 31-December-2019	1,876,317	0	0	1,876,317
01-January-2020 to 31-January-2020	178,838	0	0	178,838
Total	3,278,486	0	0	3,278,486

Approved by



Dr. Kaviraj Singh
Managing Director
Earthood Services Privated Limited

Date: 30-September-2020
Place: Gurgaon, Haryana

APPENDIX 1: DOCUMENTS REVIEWED OR REFERENCED (VERIFICATION)

S.No	Title of Document	Version	Date
1.	Registered VCS PD	version 02	29-January-2019
2.	Initial VCS Monitoring Report Final VCS Monitoring Report	01 02	21-March-2020 21-September-2020
3.	ER spread sheet (corresponding to the final monitoring report)	02	21-September-2020
4.	Certificates of calibration for all SPVs belongs to project activity	-	-
5.	Invoice issued by PP for the duration of monitoring period (01-March-2018 to 31-January-2020)	-	-
6.	Joint Meter Readings for the duration of monitoring period 01-March-2019 to 31-January-20)	-	-
7.	ACM0002: Large-scale Consolidated Methodology: Grid-connected electricity generation from renewable sources & AMS I.D. Grid connected renewable electricity generation	Version 19.0 Version 18	-
8.	CO ₂ Baseline Database for the Indian Power Sector published by the Central Electricity Authority (CEA), Ministry of Power, Govt.	version 13	June, 2018
9.	Remote Audit through Skype video call/Telephonic discussions	-	12-June-2020
10.	Commissioning certificates/Calibrations records for initial calibration of the meters installed during commissioning of the project activity	-	-
11.	Power Purchase Agreements for SPVs	-	-
12.	VCS webpage for the project, VCS ID 1753; https://registry.verra.org/app/projectDetail/VCS/1753	-	Last accessed on 20-August-2020
13.	O&M contract for all project sites	-	-
14.	VCS Standard	Version 4.0	Last accessed on 20-August-2020
15.	VCS Program Guide	Version 4.0	Last accessed on 20-August-2020
16.	Letter of declaration dated from PP regarding not having created or sought any other form of environmental credit for the same period and double counting	-	24-June-2020
17.	Google Earth desktop/Mobile application	-	Last accessed on 20-August-2020
18.	Technical specifications by technology supplier		
19.	Meter calibration guidelines: http://cea.nic.in/reports/regulation/CEA_metering_regulation_amendment_2019.pdf	-	-
20.	Photograph of site/Name plates	-	-
21.	Joint Validation & Verification report of the first monitoring period.	Version 01	09-February-2019

S.No	Title of Document	Version	Date
22	Ministry of Home Affairs Order https://www.mha.gov.in/sites/default/files/MHAorder%20copy.pdf		24-March-2020
23	Ministry of Home Affairs Order (D.O No.40-3/2020-DM-I(A) https://www.mha.gov.in/sites/default/files/MHA%20DO%20letter%20dt.14.4.2020%20to%20Chief%20Secretaries%20and%20Administrators%20for%20strict%20implementation%20of%20Lockdown%20Order%20during%20extended%20period.pdf	-	14-April-2020
24	Ministry of Home Affairs Order (Order No.40-3/2020-DM-I(A) https://www.mha.gov.in/sites/default/files/MHA%20Order%20Dt.%2015.2020%20to%20extend%20Lockdown%20period%20for%202%20weeks%20w.e.f.%204.5.2020%20with%20new%20guidelines.pdf	-	01-May-2020
25	https://www.mha.gov.in/sites/default/files/MHAOrderextension_1752020_0.pdf	-	17-May-2020
26	Break down log sheet of Plants	-	-
27	Skill development training records	-	-
28	Copies of the grievance registers maintained at sites	-	-

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	01	Section no.	E.2	Date : DD/MM/YYYY
Description of FAR				
There is no FAR from the validation 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	02	Section no.	4.1	Date : 23-June-2020
Description of CL				
NA				
Project participant response				Date : DD/MM/YYYY
Documentation provided by project participant				
DOE assessment				Date: DD/MM/YYYY

Table 3. CAR from this verification

CAR ID	03	Section no.	4.1	Date : 23-June-2020
Description of CAR				
Following inconsistencies observed during review of monitoring report:				
- Section 1.1 of the MR is not inline with guidelines to complete MR, VCS Version 04. - Geo-coordinates for ACME Chittorgarh Solar Energy Pvt. Ltd are not matching with Google earth. - Section 1.1.of the MR – Section not inline with VCS approved Joint VCS PD & MR. - Section 3.3 is not completed inline with VCS approved Joint VCS PD & MR.				
Project participant response				Date : 06-July-2020
- MR V2 is now being updated as per the guidelines of VCS version 04. - Geo-coordinates of ACME Chittorgarh Solar Energy Pvt. Ltd is now updated, the correspond location depicts the adequate place in google maps. - Section 1.1 of MR V2 is now being updated as per the registered VCS PD & MR. - Section 3.3 is now being updated over the PD MR V2.				
Documentation provided by project participant				
MR V2.				
DOE assessment				Date: 23-August-2020
- Section 1.1 of MR have been updated now and found inline with guidelines. CAR closed. - Geo-coordinates for ACME Chittorgarh Solar Energy Pvt. Ltd are now updated and matching with site locations. CAR closed. - Section 1.1.of the MR is now corrected and inline with VCS approved Joint VCS PD & MR. CAR closed. - Section 3.3 is now completed inline with VCS approved Joint VCS PD & MR. CAR closed.				

CAR ID	04	Section no.	4.1	Date : 23-June-2020
Description of CAR				
PP requested to submit all relevant supporting documents like commissioning certificates, Technical specifications, O&M agreements, break down details, PPA, training records, etc. of all SPV involved in the project activity for review by assessment team.				
Project participant response				Date : 06-July-2020
<i>Commissioning certificates, technical specification, O&M agreement, breakdown details, PPA, training records and additional information is submitted for the assessment.</i>				
Documentation provided by project participant				
<i>Commissioning certificate, plant equipment technical, O&M agreement, breakdown details, PPA and training records.</i>				
DOE assessment				Date: 23-August-2020
PP have submitted requisite documents and information in MR found inline with the documents submitted. CAR thus closed.				

CAR ID	05	Section no.	4.1	Date : 23-June-2020
Description of CAR				
Section 3.1 of the MR is not clear about actual implementation of project activity. Further, section missing information on “The operation of the project activity(s) during this monitoring period, including any information on events that may impact the GHG emission reductions or removals and monitoring”. Corrections requested.				
Project participant response				Date : 06-July-2020
<i>Section 3.1 is being updated over the MR V2.</i>				
Documentation provided by project participant				
<i>MR V2.</i>				
DOE assessment				Date: 23-August-2020
Section 3.1 of the MR is now updated for actual implementation & operation of project activity including any abnormal event having impacts on the ER or monitoring practices. CAR closed.				

CAR ID	06	Section no.	4.1	Date : 23-June-2020
Description of CAR				
PP requested to submit declaration in effect of avoiding double counting with regard to participation under other GHG Programs/Other forms credits, rejection under other GHG program etc.				
Project participant response				Date : 06-July-2020
<i>No Double counting declaration is being provided.</i>				
Documentation provided by project participant				
<i>Double counting declaration</i>				
DOE assessment				Date: 23-August-2020
PP have submitted declaration dated 24-June-2020 for avoidance of double counting and non-participation in other GHG programme. CAR thus closed.				

CAR ID	07	Section no.	4.2.2	Date : 23-June-2020
Description of CAR				
Section 2.2 of MR is not inline with the guidelines to complete monitoring report. PP also requested to submit copies of grievance registers.				
Project participant response				Date : 06-July-2020
<i>Section 2.2 is being updated and the supporting grievance copies is being submitted.</i>				
Documentation provided by project participant				
<i>Scan copies of grievance register</i>				
DOE assessment				Date: 23-August-2020
Section 2.2 of the MR have been corrected for the ongoing LSC mechanism. PP have also submitted grievance registers for the sites and no major grievance occurred during current monitoring period. CAR thus closed.				

CAR ID	08	Section no.	4.4	Date : 23-June-2020
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Description of CAR	
PP requested to submit all supporting documents for calculation of net electricity generation supplied by the project activity along the copies of invoices for cross checking.	
Project participant response	Date : 06-July-2020
<i>JMR,B-Forms and Invoices is being submitted for all SPVs for the monitoring period.</i>	
Documentation provided by project participant	
<i>JMRs/B-Forms and Invoices</i>	
DOE assessment	Date: 23-August-2020
PP have submitted all JMR and invoices for the all SPVs. During review it was found that export & import values are missing for the SPVs 1.9 ACME Bhiwadi Solar Power Pvt Ltd, 1.10 ACME Hisar Solar Power Private Limited & 1.11 ACME Karnal Solar Power Private Limited in the ER sheet as well as REA statement since October 2018. Corrections sought accordingly in the MR and ER sheet.	
Project participant response	Date : 24-August-2020
Central Electricity Authority along with Regional Load Dispatch centres at various intervals updates the meter reading practice in India. This time CEA along with SRLDC upgrades the metering practice to the optimum level which is based on robust technology and requires minimum human intervention. This is as per the CEA regulation viz DSM Regulations on 06-January-2014, which came into force with effect from 17-February-2014 (Supporting's is been attached). This mandates from October 2018 in Andhra Pradesh and Southern States of India. Therefore a permanent monitoring deviation has been taken. Currently in this monitoring period, 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.	
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 is 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.	
Documentation provided by project participant	
Revised MR	
DOE assessment	Date: 26-August-2020
Assessment team gone through the response and documents submitted. It was noted that the Deviation Settlement Mechanism (DSM) starts from October 2018 for this SPVs. Regional Energy Account reports have now providing scheduled energy, net energy and/or deviation. Thus export & import values are not available with the PP. JMR procedure is under the control of State Utility/SECI and PP do not have control on the same. Thus, deviation applied for monitoring deviation by the PP is accepted by the assessment team as it do not have impact on the emission reduction calculation approach and methodological choices as well as inline with the applied methodology.	

Table 4. FAR from this verification

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

APPENDIX 3: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS

Competence Statement			
Name	Atul Takarkhede		
Education	Ph.D. Environmental Science		
Experience	12 years		
Field	Climate Change and environment		
Approved Roles			
Team Leader	YES		
Validator	NO		
Verifier	NO		
Methodology Expert	NO		
Local expert	NO		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert	YES (1.2)		
Reviewed by	Shreya Garg	Date	24/04/2019
Approved by	Anshika Gupta	Date	25/04/2019

Name	Shreya Garg
Country	India
Education	M.Sc. (Climate Science & Policy), TERI University
Experience	7 Years +
Field	Climate Change
Approved Roles	
Team Leader	YES
Validator	YES
Verifier	YES
Methodology Expert	AMS.I.A., AMS.I.C., AMS.I.D., AMS.I.F., AMS.II.D., AMS.II.G., AMS.II.J., AMS.III.AV., ACM0002, ACM0012
Local expert	YES (India)
Financial Expert	NO

Technical Reviewer	YES		
TA Expert	YES (TA 1.2, TA 3.1)		
Reviewed by	Abhishek Mahawar	Date	01/03/2018
Approved by	Ashok Gautam	Date	01/03/2018

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: METER CALIBRATION DETAILS

Since the calibration frequency of the meters are once in five years, the calibration is valid during the current monitoring period. For all SPVs pre-calibrated meters were installed during commissioning of the SPV though monitoring period starts from 01-March-2018 i.e. commissioning of first SPV. Hence, no error factor has been applied due to delay in calibration.

The Energy Meters details used for the respective SPV are tabulated below:

Project Instance Number	Name of the SPVs	Capacity (MW)	Main Meter Details	Check Meter Details	Calibration Date ¹	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	15-November-2017	14-November-2022
	ACME 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	02-June-2017	01-June-2022
	ACME 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	14-July-2017	13-July-2022
	ACME 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	11-September-2017	10-September-2022
	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	07-July-2017	06-July-2022
	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	05-February-2018	04-February-2023
	ACME Rewari Solar Power Pvt Ltd	50	Line 1 (25 MW) SL. No. 17151088 Make: L&T Class: 0.2s	Line 1 (25 MW) SL. No. 17151035 Make: L&T Class: 0.2s Line 2 (25 MW)	31-January-2018	30-January-2023

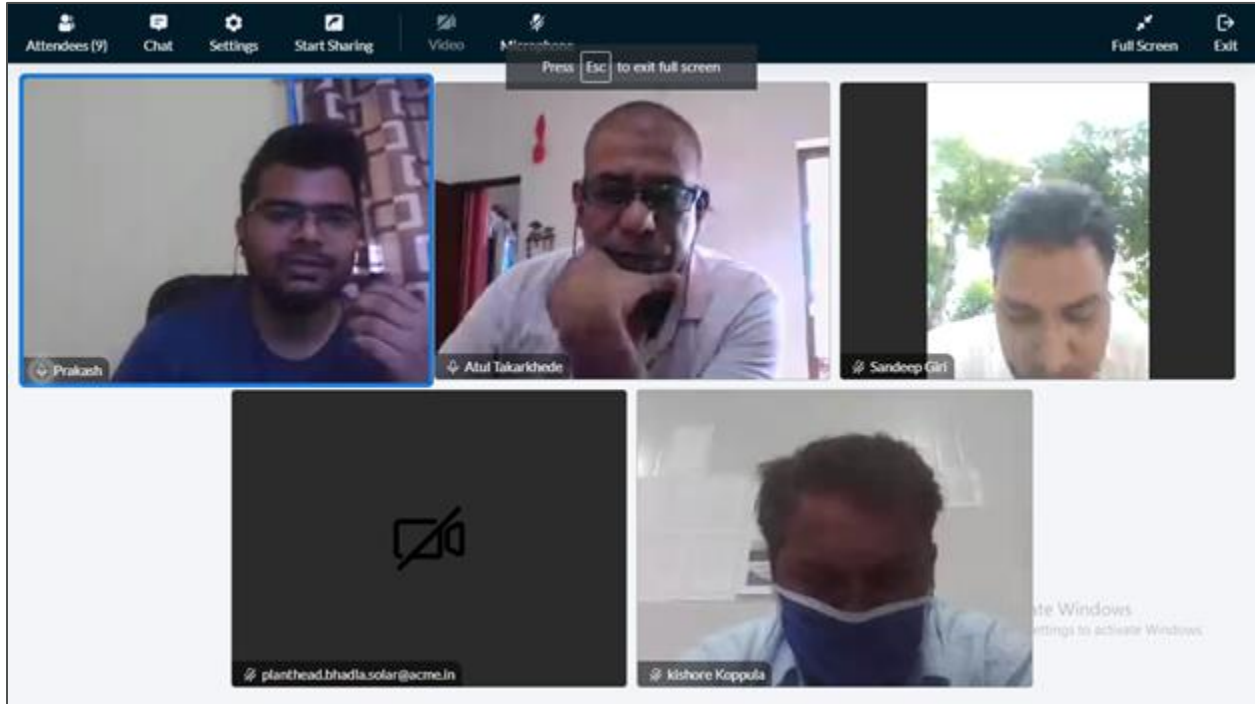
¹ For all SPVs pre-calibrated meters were installed during commissioning of the SPV though monitoring period starts from 01-March-2018 i.e. commissioning of first SPV.

Project Instance Number	Name of the SPVs	Capacity (MW)	Main Meter Details	Check Meter Details	Calibration Date ¹	Due date
			Line 2 (25 MW) SL. No. 17151076 Make: L&T Class: 0.2s	SL. No. 17151090 Make: L&T Class: 0.2s		
	ACME Kurukshetra Solar Energy Pvt Ltd	50	For RR No. KSPDCL-R2-A21 Main Meter- 17125700 Accuracy Class- 0.2s For RR No. KSPDCL-R2-A22 Main Meter- 17151006 Accuracy Class- 0.2s	For RR No. KSPDCL-R2-A21 Check Meter- 17125702 Accuracy Class- 0.2s For RR No. KSPDCL-R2-A21 Check Meter- 17151039 Accuracy Class- 0.2s	31-January-2018	30-January-2023
	ACME Bhiwadi Solar Power Pvt Ltd	50	SL. No. APZ00264 Make: Secure Accuracy Class: 0.2s	SL. No. APZ00265 Make: Secure Accuracy Class: 0.2s	01-July-2018	30-June-2023
	ACME Hisar Solar Power Private Limited	50	SL. No. APZ00226 Make: Secure Accuracy Class: 0.2s	SL. No. APZ00227 Make: Secure Accuracy Class: 0.2s	21-June-2018	20-June-2023
	ACME Karnal Solar Power Private Limited	50	SL. No. APZ00260 Make: Secure Accuracy Class: 0.2s	SL. No. APZ00261 Make: Secure Accuracy Class: 0.2s	15-June-2018	14-June-2023
	ACME Kaithal Solar Power Private Limited	40	SL. No. 17054932 Accuracy class: 0.2 s	SL. No. 17054938 Accuracy class: 0.2 s	24-January-2018	23-January-2023
	ACME Babadham Solar Power Private Limited	40	SL. No. 16113468 Accuracy class: 0.2 s	SL. No. 17069195 Accuracy class: 0.2 s	22-January-2018	21-January-2023
	ACME Koppal Solar Energy Private Limited	40	SL. No. 17115504 Accuracy class: 0.2 s	SL. No. 17069212 Accuracy class: 0.2 s	15-April-2018	14-April-2023
	ACME Vijayapura Solar Energy Pvt Ltd	40	SL. No. 17054962 Accuracy class: 0.2 s	SL. No. 17054957 Accuracy class: 0.2 s	23-January-2018	22-January-2023
	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	24-September-2018	23-September-2023
	ACME Chittorgarh Solar Energy Pvt. Ltd	250	SL. No. 18053539	Sl. No. 18053540	26-October-	25-October-

Project Instance Number	Name of the SPVs	Capacity (MW)	Main Meter Details	Check Meter Details	Calibration Date ¹	Due date
			Make: L&T Accuracy Class: 0.2s	Make: L&T Accuracy Class: 0.2s	2019	2024
2	ACME 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	02-March-2017	01-March-2022
3	Purvanchal Solar Power Pvt Ltd	15	SL. No. APZ00101 Make: Secure Accuracy class: 0.2 s	SL. No. APZ00102 Make: Secure Accuracy class: 0.2 s	23-February-2017	22-February-2022
4	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	24-March-2017	23-March-2022
5	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	25-March-2017	24-March-2022
6	ACME Fazilka Power Pvt Ltd (Nandipet)	15	SL. No. APZ001116 Make: Secure Accuracy class: 0.2 s	SL. No. APZ001115 Make: Secure Accuracy class: 0.2 s	13-March-2017	12-March-2022
7	ACME 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	24-February-2017	23-February-2022
8	ACME 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	03-March-2017	02-March-2022
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	19-February-2017	18-February-2022
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	19-February-2017	18-February-2022
11	Sunworld Energy Pvt Ltd	13	SL. No. UKD02407 Make: Secure Accuracy class: 0.2 s	SL. No. UKD02412 Make: Secure Accuracy class: 0.2 s	10-February-2017	09-February-2022
12	ACME Yamunanagar Solar Power Pvt Ltd-	10	SL. No. APZ00321	SL. No. APZ00322 Make: Secure	26-Septembe	25-Septembe

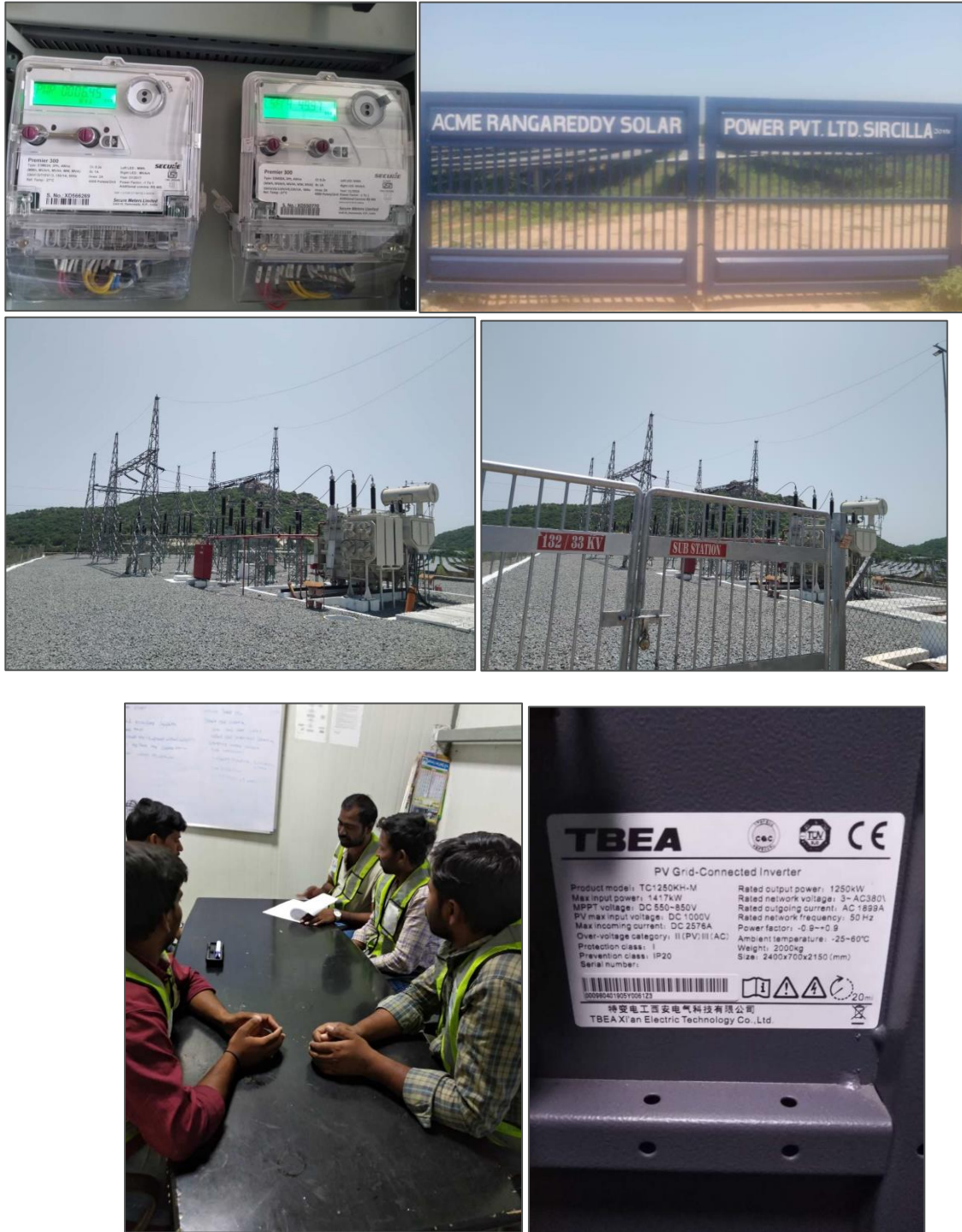
Project Instance Number	Name of the SPVs	Capacity (MW)	Main Meter Details	Check Meter Details	Calibration Date ¹	Due date
	1 (KOSGI)		Make: Secure Accuracy class: 0.2 s	Accuracy class: 0.2 s	r-2017	r-2022
13	ACME Yamunanagar Solar Power Pvt Ltd-2 (MOTHKUR)	10	SL. No. APZ00316 Make: Secure Accuracy class: 0.2 s	SL. No. APZ00317 Make: Secure Accuracy class: 0.2 s	17-September-2017	16-September-2022
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	11-September-2017	10-September-2022
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	09-September-2017	08-September-2022
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	12-September-2017	11-September-2022

APPENDIX 6: REMOTE AUDIT SNAPS AND SITE PHOTOGRAPHS



ACME Ranga Reddy Solar Power Pvt Ltd





ACME Chittorgarh



ACME Karimnagar



ACME Karnataka Site



ACME Koppal Solar Energy Private Limited





Purvanchal Solar Power Pvt Ltd

