

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



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Summary:

Verification purpose: The proposed grouped project activity is a step towards supporting the implementation and installation of grid connected renewable energy power plants in India. The implementation of grouped project activity ensures energy security, diversification of the grid generation mix and sustainable growth of the electricity generation sector in India.

The main goal of grouped project activity is to implement renewable energy projects in the country and the significant importance of revenues from sale of Verified Carbon Units (VCUs) to achieve this goal forms the basis of the implementation of this grouped project activity. The grouped project activity is a voluntary action and each SPV is the Project Proponent for their project activity Instance. ACME Group as a parent company formed different SPV (Special Purpose Vehicles) for solar projects and projects are developed by name of SPVs. There are no mandatory laws or regulations existing in India requiring PP or any other party to develop a programme for renewable generation plants.

The grouped project activity supports the development of new grid-connected renewable energy power plants in India and will cover the solar energy technologies. It seeks to enable investment in large scale and small scale grid connected plants that export their generated output to the regional / national electricity grid in India.

All the project instances i.e. renewable energy generation solar PV plants included in this grouped project are from within India only. Hence the location and geographical boundary of the grouped project can be defined as India. The estimated annual emission reductions over a 10 year period of first crediting period from initial 11 project activity instances are 730,457 tCO₂e/year. The total emission reductions for 10 years crediting period will be 7,304,570 tCO₂e.

It is to be noted that SPV - Mihit Solar Power Private Ltd have three projects (25 MW + 25 MW + 24 MW = 74 MW) in Punjab state and all these three projects are considered under single project activity instance.

All 11 project activity instances are commissioned and the commission dates are mentioned in section 2.1 of VCS MR. The Commissioning dates are checked and found correct by the assessment team.

The details of 11 project activity instances involved in current monitoring period are as below

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

The total GHG Emission reductions generated in current monitoring period of 01/02/2017 to 30/11/2017 are 614,147 tCO₂e No More project activity instance is included in the grouped project activity during current monitoring period.

Assessment team confirms following during the verification site visit:

1. Start date of the project activity is 22/06/2015 as mentioned in the registered PD. This project activity instance is SPV- Acme Odisha Solar Power Pvt Ltd under ACME group having installed capacity of 25 MW.
2. An undertaking dated 05/02/2018 has been submitted by PP for double counting with any other GHG program. PP also has given a written declaration that project has not claimed other form of GHG credit for the concerned monitoring period. Assessment team also checked that the projects are not registered under the REC mechanism of India and the same can be cross-checked at <https://recregistryindia.nic.in>.
3. Project crediting period for grouped project activity is taken as 10 years renewable twice.

Accordingly the start date of the first crediting period is 22/06/2015 and end date will be 21/06/2025.

First crediting period is from 22/06/2015 to 21/06/2025.

Current monitoring period is MP02 from 01/02/2017 to 30/11/2017

4. Project location is confirmed by the assessment team during the site visit. Assessment team also checked with the GPS meter regarding the latitude and longitude of the project site and confirm that the details as mentioned in the registered PDD is correct. The detail is as below:

PP Name	MW	COD ¹	State	Latitude (N)	Longitude (E)
Mihit Solar Power Private Ltd.	25	21/03/2016	Punjab	29.66	75.26
Mihit Solar Power Private Ltd.	25	21/03/2016	Punjab	29.59	75.24
Mihit Solar Power Private Ltd.	24	28/02/2016 (for 11.5 MW) 30/03/2016 (for 12.5 MW)	Punjab	29.62	75.20
ACME Jaisalmer Solar Power Pvt. Ltd.	20	12/05/2016	Andhra Pradesh	14.11	78.78
Aarohi Solar Pvt. Ltd.	50	29/03/2016	Andhra Pradesh	13.98	77.48
Dayanidhi Solar Power Pvt. Ltd.	40	01/04/2016	Andhra Pradesh	12.88	78.38
Niranjana Solar Energy Pvt. Ltd.	20	31/03/2016	Andhra Pradesh	15.36	77.49
Vishwatma Solar Energy Pvt Ltd.	30	02/04/2016 (for 10 MW) 30/04/2016 (for 20 MW)	Andhra Pradesh	15.67	77.47
Acme Raipur Solar Power Pvt. Ltd.	30	09/01/2016 (for 23 MW) 15/03/2016 (for 7 MW)	Chattishgarh	21.12	82.48
Dayakara Solar Power Pvt Ltd	30	21/06/2016	Telangana	16.88	77.58
Grahati Solar Energy Pvt Ltd	50	20/07/2016 (for 20 MW) 03/08/2016 (for 30 MW)	Telangana	16.93	78.13

¹ Date of Commissioning

Acme Odisha Solar Power Pvt Ltd	25	22/06/2015	Odisha	20.54	83.38
Eminent Solar Power Pvt Ltd.	12.5	09/02/2017	Uttarakhand	29.2	79.1

5. Project proponent of the project activity is as below²:

Organization name	Mihit Solar Power Private Ltd.
Contact person	Gursharan Jassal
Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	-
Email	-

Organization name	ACME Jaisalmer Solar Power Pvt. Ltd.
Contact person	Gursharan Jassal
Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	-
Email	-

Organization name	Aarohi Solar Pvt. Ltd
Contact person	Jyoti Arora
Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	-
Email	-

Organization name	Dayanidhi Solar Power Pvt. Ltd.
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² All the project proponent are sisters concern of ACME group with which the DOE has signed the contract

Contact person	Manish Karna
Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	-
Email	-

Organization name	Niranjana Solar Energy Pvt. Ltd.
Contact person	Yudhvir Singh Gulia
Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	-
Email	-

Organization name	Vishwatma Solar Energy Pvt Ltd.
Contact person	Ashish K. Saxena
Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	-
Email	-

Organization name	Acme Raipur Solar Power Pvt. Ltd.
Contact person	Rajesh Sodhi
Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	-
Email	-

Organization name	Dayakara Solar Power Pvt Ltd
Contact person	Rajesh Sodhi

Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	-
Email	-

Organization name	Grahati Solar Energy Pvt Ltd
Contact person	Jyoti Arora
Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	-
Email	-

Organization name	Acme Odisha Solar Power Pvt Ltd
Contact person	Gursharan Jassal
Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	-
Email	-

Organization name	Eminent Solar Power Pvt. Ltd
Contact person	Gursharan Jassal
Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	-
Email	-

6. Other Entities Involved in the Project

Organization name	EKI Energy Services Ltd.
Role in the project	Project Consultancy
Contact person	Mr. Ramkrishna Patil

Title	General Manager- Operations
Address	Office No 201, Plot No 48, Scheme 78, Part 2, Vijay Nagar, Indore- 452010, Madhya Pradesh, India
Telephone	+919096562065
Email	ramkrishna.patil@enkingint.org

- The quantified emission reduction calculation for the monitoring period is correct and conservative. The actual VER is compared with the estimated VER and assessment team observed that the actual emission reductions are 614,147 tCO₂ which is 4.79% higher than estimated for the concerned monitoring period (= 303 days i.e. 586,053 tCO₂). This is due to high PLF factor during current monitoring period. The PLF is not under control of PP. Though there is no change in project design. Moreover, PP has checked the additionality and found that the higher PLF is within the threshold Sensitivity limit of PLF for the registered PD. Hence there is no any adverse impact on additionality.

A risk based approach has been followed to perform this verification activity. In the course of verification, 07 Corrective Action request (CAR) and 00 Clarification Requests (CLs) and 00 forward action request were raised and successfully closed. 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.

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1 INTRODUCTION

1.1 Objective

LGAI Technological Center S.A. (hereafter referred as *Applus+ Certification*) has been appointed by “ACME group” to perform the 2nd periodic verification of the “Solar Grouped project by ACME Group (EKIESL-VCS-Aug-16-01)” under VCS standard and guideline version 3.7. The objective of this verification activity is to have an independent third party for the assessment of the project design, Monitoring report and Final Validation report and to ensure a thorough assessment of the proposed project activity against the applicable CDM and VCS requirements. In particular;

- the project's baseline is assessed against “ACM0002 Grid-connected electricity generation from renewable sources --- Version 17.0” – for large project instances and AMS.I.D version 18.0 – for small project instances
- the project's monitoring plan is assessed against “ACM0002 Grid-connected electricity generation from renewable sources --- Version 17.0” – for large project instances and AMS.I.D version 18.0 – for small project instances
- 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 and standard version 3.7
- CDM validation and verification standard for project activities Version 01.0
- CDM project standard for project activities Version 01.0
- CDM project cycle procedure for project activities Version 01.0
- VCS standard v3.7
- VCS guideline v3.7

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

1.2 Scope and Criteria

The scope of the verification is the independent and objective review of the Monitoring report (MR). The MR is reviewed against the relevant criteria (see 1.1) and decisions by the CDM Executive Board and VCS executive board, including the approved baseline and monitoring methodology. The verification was based on the guidance given in the CDM validation and verification standard for project activities Version 01.0, Joint PD and MR version 4.0 dated 17/07/2017 and Final Validation and verification report version

3.0 dated 18/07/2017, CDM project standard for project activities Version 01.0, CDM project cycle procedure for project activities Version 01.0 and VCS guideline and standard version 3.7

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

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

1.3 Level of Assurance

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 site visit or document verifications. The entire documents like JMR sheets, Commissioning certificates, Invoices were checked for the solar project verification of all the instances are conducted to arrive at positive verification conclusions.

1.4 Summary Description of the Project

The purpose of the project activity is to generate energy electricity by the utilization of solar power and further selling the generated energy to the respective 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.

The grouped project activity supports the development of new grid-connected renewable energy power plants in India and will cover the solar energy technologies. It seeks to enable investment in large scale and small scale grid connected plants that export their generated output to the regional / national electricity grid in India.

All the project instances i.e. renewable energy generation solar PV plants included in this grouped project are from within India only. Hence the location and geographical boundary of the grouped project can be defined as India. The estimated annual emission reductions over a 10 year period of first crediting period from initial 11 project activity instances are 730,457 tCO₂e/year. The total emission reductions for 10 years crediting period will be 7,304,570 tCO₂e.

2 VERIFICATION PROCESS

2.1 Method and Criteria

Verification Scope: The scope is defined as an independent and objective review of the Monitoring report (MR) prepared as per the registered PD and registered approved methodology ACM0002 Grid-connected electricity generation from renewable sources --- Version 17.0 for large instances and AMS.I.D

version 18.0 for small instances. 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 and guideline version 3.7, including the approved baseline and monitoring methodology ACM0002 Grid-connected electricity generation from renewable sources --- Version 17.0 for large instances and AMS.I.D version 18.0 for small instances. The verification was based on the requirements in the CDM validation and verification standard for project activities Version 01.0, CDM project standard for project activities Version 01.0, CDM project cycle procedure for project activities Version 01.0 and VCS guideline and standard version 3.7.

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.

Verification Process: The project assessment is based on the CDM validation and verification standard for project activities Version 01.0 and VCS standard and guideline version 3.7 and is conducted using standard auditing techniques to assess the correctness of the information provided by the project participants. Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), and relevant host country experience for evaluating the VCS project activity are appointed.

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

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

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

Appointment of the assessment team

According to the sectoral scope / technical area and experience in the sectoral or national business environment, Applus+Certification has composed a project assessment team in accordance with the appointment rules in the internal Quality Management System of Applus+Certification.

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

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

- Lead Auditor (LA).
- Auditor (A) / Auditor in Training (AiT).

- Technical Expert (TE).
- Technical Reviewer (TR).

The sectoral scope / technical area knowledge linked to the applied methodology/ies shall be

Covered by the assessment team.

Name	Role	SS Coverage	TA Coverage	Financial aspect	Host country experience
Mr. Sukanta Das	LA	YES	YES	YES	YES
Mr. Simon Shen	TR	YES	YES	NA	NA

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

Document review

The Monitoring report submitted by the Client was reviewed against the approved methodology, Joint VCS PD and MR dated 17/07/2017 version 4.0 and Final Validation and verification report dated 18/07/2017 version 3.0 and other relevant criteria to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources has been done. A complete list of all documents and evidence material reviewed is included in this report below in appendix 1

Follow-up interviews

A site visit is conducted by Applus+ Certification performed interviews, telephone conferences, and physical site inspection with project stakeholders to confirm selected information and to resolve issues identified in the document review. The detail is provided in this report section 2.3

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'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 2.0 submitted by PP on 05/02/2018 serves as the basis for the final assessment and positive verification opinion. Additional changes to the project during the verification process are not considered to be significant with respect to the main CDM/VCS objectives. The two CDM/VCS main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

Internal quality control

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

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

2.2 Document Review

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

2.3 Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Krishna	Vijay	PP representative	25/01/2018 To 30/01/2018	Implementation of each project instances, Monitoring practices, project design, emission reduction calculation	Mr. Sukanta Das

The details of the Interviewed stakeholders are as follows:

25/01/2018: Punjab

26/01/2018: **Andhra Pradesh**

27/01/2018: **Chhattisgarh**

28/01/2018: **Telangana**

29/01/2018: **Odisha**

30/01/2018: **Uttarakhand.**

ACME Odisha- 25 MW Solar			
Name	Occupation	Site	State
Sujeet Panigrahi	Villager	Balongir	Odisha
Deepak Rout	Shoopkeeper		

ACME Raipur- 30 MW Solar			
Name	Occupation	Site	State

Kamal Yadav	Villager	Bagbera	Chattishgarh
Mahesh Kumar	Vegetable Seller		

Eminent Solar- 12.5 MW			
Name	Occupation	Site	State
Amit	Farmer	Uddham Singh Nagar	Uttrakhand
Raghuveer	Villager		

Dayakar Solar- 30 MW			
Name	Occupation	Site	State
S. Raju	Driver	Maddur	Telangana
Venkataraman	Shopkeeper		

Grahati Solar- 50 MW			
Name	Occupation	Site	State
Mukund L. Rao	Shopkeeper	Balanagar	Telangana
Krishna Iyer	Teacher		

Mihit Solar- 25 MW			
Name	Occupation	Site	State
Balvinder Singh	Teacher	Kherakhurd	Punjab
Jaspreet	Villager		

Mihit Solar- 25 MW			
Name	Occupation	Site	State
Ajay Sharma	Villager	Mankhera	Punjab
Jaideep Singh	Farmer		

Mihit Solar- 24 MW			
Name	Occupation	Site	State
Harpal Singh	Farmer	Jandekalan	Punjab
Amandeep	Driver		

ACME Jaisalmer- 20 MW			
Name	Occupation	Site	State

J. Subba Rao	Shopkeeper	Raichotti	Andhra Pradesh
Ajay Balakrishna	Farmer		

Arohi Solar- 50 MW			
Name	Occupation	Site	State
Arvind Rao	Fruit Seller	Hindupur	Andhra Pradesh
T. Subramiyam	Vegetable Seller		

Dayanidhi Solar- 40 MW			
Name	Occupation	Site	State
V. Krishnamurthy	Shopkeeper	Shantipuram	Andhra Pradesh
Nagarjuna	Villager		

Niranjana Solar- 20 MW			
Name	Occupation	Site	State
V. Ramarao	Student	Patthikonda	Andhra Pradesh
Vineeth Iyer	Driver		

Vishwatma Solar- 30 MW			
Name	Occupation	Site	State
P. Muthukumar	Villager	Yemmiganur	Andhra Pradesh
Suresh Venkateshwar	Farmer		

2.4 Site Inspections

Duration of on-site inspection: 25/01/2018 to 30/01/2018				
No.	Activity performed on-site	Site location	Date	Team member
1.	Assessment team checked the implementation of the project, Baseline emission, Emission reduction calculation, technical description of the project and Monitoring. Assessment team also checked that whether the monitoring plan as described in the PD is actually practised onsite. Also assessment team checked any change in host country criteria which may affect the baseline of the project activity.	Punjab Andhra Pradesh Chhattisgarh Telangana Odisha Uttarakhand.	25/01/2018: 26/01/2018 27/01/2018 28/01/2018 29/01/2018 30/01/2018	Mr. Sukanta Das

2.5 Resolution of Findings

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

The final MR Version 2.0 submitted by PP on 05/02/2018 serves as the basis for the final positive verification opinion. Additional changes to the project during the verification process are not considered to be significant with respect to the main CDM/VCS objectives. The two CDM/VCS main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

Areas of validation and verification findings	No. of CL	No. of CAR	No. of FAR
Project design document and Monitoring report	00	01	00
Description of project activity	00	00	00
Application of selected baseline and monitoring methodology and selected standardized baseline			
- Applicability of methodology and standardized baseline	00	00	00
- Deviation from methodology	00	00	00
- Clarification on applicability of methodology, tool and/or standardized baseline	00	00	00
- Project boundary	00	00	00
- Establishment and description of baseline scenario	00	00	00
- Demonstration of additionality	00	00	00
- Emission reductions	00	01	00
- Calibration details	00	01	
- Monitoring plan	00	00	00

Areas of validation and verification findings	No. of CL	No. of CAR	No. of FAR
Others (please specify)-	00	04	00
1. Matter related to breakdown details			
2. Matter related to double counting			
3. Matter related to No Net Harm			
4. Matter related to Local stakeholder			
Total	00	07	00

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

2.5.1 Forward Action Requests

This is 2nd periodic verification of the project activity and no FAR raised during validation and subsequent 1st verification.

2.6 Eligibility for Validation Activities

This section is not applicable as the project has undergone verification only.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

This section is not applicable as the project is registered under VCS only.

3.2 Methodology Deviations

This section is not applicable as there is no methodology deviation observed during this verification period.

3.3 Project Description Deviations

This section is not applicable as there is no project deviation observed during this verification period.

3.4 Grouped Project

No new instances added during the verification for the current monitoring period.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

During the verification site visit it was concluded that the project is implemented as per the requirement of the registered PD and Final Validation report. During the current monitoring period it was observed that no unforeseen incident/event evolved which can impact the operation of the project activity. The project undergone continuous operation and only scheduled maintenance is observed as per the manufactures specification which is acceptable to the assessment team.

CAR 01 is however raised regarding details of the Feeder location of the individual project location and CAR 02 is raised for the details of downtime/breakdown records.

Feeder details are provided which is confirmed by the assessment team during the verification site visit. The Feeder details is included in the MR and thus the CAR01 is closed.

Breakdown log sheets for individual power project i.e. solar panels is submitted by PP. There was no breakdown during the monitoring period. Scheduled maintenance was carried out as per the instruction of the manufacturer and the same is acceptable to the assessment team. CAR 02 is thus closed.

Project locations is also confirmed by the assessment team with Google earth and confirm that the detail as mentioned in the PD is correct. The detail is as below:

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

Acme Odisha Solar Power Pvt Ltd	25	Odisha	Balongir,	20.54	83.38
Eminent Solar Power Pvt Ltd.	12.5	Uttarakhand	Uddham Singh Nagar	29.2	79.1

The project commissioning details are checked by the assessment team against the commissioning certificates and found that the details as provided in the MR is correct.

PP Name	MW	COD	State	Project Location
Mihit Solar Power Private Ltd.	25	21/03/2016	Punjab	Kherakhurd
Mihit Solar Power Private Ltd.	25	21/03/2016	Punjab	Mankhera
Mihit Solar Power Private Ltd.	24	28/02/2016 (for 11.5 MW) 30/03/2016 (for 12.5 MW)	Punjab	Jandekalan
ACME Jaisalmer Solar Power Pvt. Ltd.	20	12/05/2016	Andhra Pradesh	Raichotti
Aarohi Solar Pvt. Ltd.	50	29/03/2016	Andhra Pradesh	Hindupur
Dayanidhi Solar Power Pvt. Ltd.	40	01/04/2016	Andhra Pradesh	Shantipuram
Niranjana Solar Energy Pvt. Ltd.	20	31/03/2016	Andhra Pradesh	Patthikonda
Vishwatma Solar Energy Pvt Ltd.	30	02/04/2016 (for 10 MW) 30/04/2016 (for 20 MW)	Andhra Pradesh	Yemmiganur
Acme Raipur Solar Power Pvt. Ltd.	30	09/01/2016 (for 23 MW) 15/03/2016 (for 7 MW)	Chattishgarh	Bagbera
Dayakara Solar Power Pvt Ltd	30	21/06/2016	Telangana	Maddur
Grahati Solar Energy Pvt Ltd	50	20/07/2016 (for 20 MW) 03/08/2016 (for 30 MW)	Telangana	Balanagar
Acme Odisha Solar Power Pvt Ltd	25	22/06/2015	Odisha	Balongir,
Eminent Solar Power Pvt Ltd.	12.5	09/02/2017	Uttarakhand	Uddham Singh Nagar

The quantified emission reduction calculation for the monitoring period is correct and conservative. The actual VER is compared with the estimated VER and assessment team observed that the actual emission reductions are 614,147 tCO₂ which is 4.79% higher than estimated for the concerned monitoring period (= 303 days i.e. 586,053 tCO₂). This is due to high PLF factor during current monitoring period. The PLF is not under control of PP. Though there is no change in project design. Moreover, PP has checked the additionality and found that the higher PLF is within the threshold Sensitivity limit of PLF for the registered PD. Hence there is no any adverse impact on additionality.

NO overestimation of VERs is thus envisaged and thus assessment team confirm that the actual emission reduction calculation achieved is conservative and correct.

The assessment team confirmed that there is no proposed or actual change to the project design of individual instances during this monitoring period. The project design for individual instances as mentioned in the registered PD is implemented and thus no deviation is envisaged for the same.

All required monitoring equipment's and procedures as mentioned in the registered PD are available and implemented in an appropriate manner.

It was observed that the monitoring plan was implemented as per the requirement of the registered PD, approved methodology ACM 0002 version 17.0 for large instances and AMS.I.D version 18.0 for small instances. The organisational role and responsibility as mentioned in the registered PD is followed onsite. All the monitoring equipment was calibrated as per the specified interval in the registered PD. All the emergency preparedness as mentioned in the registered PD is followed onsite and no discrepancies were found regarding the same.

It was also observed during the verification process is that project is not rejected by any other GHG program around the world. CAR 05 however is raised for the same. Please refer Appendix 2 of this report for the detail closure of the CAR.

Assessment team hereby confirms from the declaration made by PP dated 05/02/2018 that the project has not sought or received any other GHG related environmental credit. The projects are not registered under the REC mechanism of India and the same is cross-checked at <https://recregistryindia.nic.in>.

Assessment team confirms from the declaration from PP dated 05/02/2018 that Net GHG emission reductions or removals generated by the Project will not be used for compliance with any other emissions trading program or to meet binding limits on GHG emissions in any other Emission Trading program for the current monitoring period.

The assessment team observed that the project is in line with the registered PD, FVR and approved methodology and thus no clarification/deviation is sought.

Assessment team also checked the technical specification of each solar panels for the individual project instances and confirm that the technical specification as mentioned in the registered PD is correct. The details are as below:

Technical Specifications of the 11 project activity instances

1. Mihit Solar Power Private Ltd.

a) Mihit Solar Power Private Ltd kherakhurd 25 MW

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

b) Mihit Solar Power Private Ltd. Mankhera 25 MW

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

c) Mihit Solar Power Private Ltd. Jhandekalan 24 MW

Technical detail of the equipment	Remark
Technology	Polycrystalline modules on Seasonal Tilt 25 degree & 5 degree.
Solar photovoltaic module	Waree China - 250wp (37915 Nos.) Waree China - 255wp (1826 Nos.) Waree China - 260wp (4563 Nos.) Waree China - 265wp (182 Nos.) Waree India - 250wp (12750 Nos.) Waree India - 255wp (24492 Nos.) Waree India - 260wp (14400 Nos.) TELSUN - 260wp (3136 Nos.)

No. of modules	99264
Total Number of Invertors	19 Units
Transformer numbers and KVA ratings	Power transformer: 25000 KVA(1 Nos)-Make: Schneinder Aux. Trafo: 100 KVA(1 Nos)-Make: GTB(Ludhiana) Inv. Trafo: 4000 KVA(5 Nos)-Make: Sudhir Aux. Trafo ICR: 5KVA(5 Nos)-Make: Shivalic
Central inverters of nominal AC power, output KVA rating , make etc	1000 KW, ABB - Total 12 Nos. 1000 KW, TBEA - Total 7 Nos.
Technical & Operational Lifetime	25 years

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

Technical detail of the equipment	Remark
Technology	Polycrystal modules on Seasonal Tilt at 3 degrees and 15 degrees
Solar photovoltaic module	250Wp Modules of make - BYD, 255Wp Modules of make -BYD, 260Wp Modules of make -BYD, 260Wp Modules of make - Talesun
No. of modules	99096
Total Number of Invertors	20 Units
Transformer numbers and KVA ratings	4 Nos - 4MVA, 2 Nos - 2MVA, 1Nos-100KVA
Central inverters of nominal AC power, output KVA rating , make etc	1MVA-ABB - 16Nos, 1MVA - TBEA - 4 Nos.
Technical & Operational Lifetime	25 years

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

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

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

Technical detail of the equipment	Remark
Technology	Poly Crystalline 3 Deg & 15 Deg (Seasonal Tilt)
Solar photovoltaic module	BYD,TALESUN(250W,255W,260W)
No. of modules	188232
Total Number of Invertors	38 No's (In operation), 3 No's (Not in Operation) using As spare

Transformer numbers and KVA ratings	20MVA(2Power Trafo's),4 MVA (9 Trafo's) & 2 MVA (1 Trafo),100KVA (2 Trafo's) Spare:- 2MVA(1 Trafo),100KVA(1Trafo)
Central inverters of nominal AC power, output KVA rating , make etc	ABB:-14 No's PVS 800-57-1000KW-C TBEAA:-24NO's TBEA1000KH-M
Technical & Operational Lifetime	25 years

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

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

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

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

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

Technical detail of the equipment	Remark
Technology	Thin Film-CdTe modules on variable Tilt at 5 Sep _ Apr and 21 Apr to Sep
Solar photovoltaic module	Talesun & BYD - 250,255 &260
No. of modules	118776
Total Number of Invertors	28

Transformer numbers and KVA ratings	Main Power transformer 1 Make ABB 25/30 MVA
Central inverters of nominal AC power, output KVA rating , make etc	24 ABB 1000KW & 6 SUNGRO 630KW Inverter Transformer Raychem RPG 6 nos. – 4MVA & 1 no. -2.5MVA
Technical & Operational Lifetime	25 years

8. Dayakara Solar Power Pvt Ltd., Maddur (30 MW)

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

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

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

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

Technical detail of the equipment	Remark
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Technology	POLY CRYSTALLINE MODULE WITH SEASONAL TILTING (5,21 DEGREES)
Solar photovoltaic module	250,255 & 260 Wp module of trina solar
No. of modules	118992
Total Number of Invertors	37
Transformer numbers and KVA ratings	Inverter transformer: 9 nos (2720 KVA,380V/11kv) + 1 nos (700 KVA, 340V/11kv) Power transformer: 1 nos (25/30 MVA, 11kv/132kv)
Central inverters of nominal AC power, output KVA rating , make etc	33 nos of schneider (680kw, output: 380V)+ 4 nos of TBEA (630 kw,output:340V)
Technical & Operational Lifetime	25 years

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

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

4.2 Accuracy of GHG Emission Reduction and Removal Calculations

Means of verification	The verification team assessed whether the data and calculations of GHG emission reductions achieved resulting from the VCS PD. The verification team has checked whether calculations of baseline GHG emissions, project GHG emissions and leakage GHG emissions have been carried out in accordance with the formulae and methods described in the monitoring plan of the VCS PD
Findings	CAR 03 was raised during the verification. The description of the CAR and its closure is described below in Appendix 2 of this report. PP was asked to submit Credit report/JMR/Invoices for the complete monitoring period.
Conclusion	Ex-ante Parameter: $EF_{grid,CM,y}$ = Parameter is fixed ex-ante for the entire crediting period and as per the validated VCS PD same is fixed 0.9777 tCO₂/MWh. Verification team found same was used in the ER calculations. 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:

$$BE_y = EG_{\text{facility},y} \times EF_{\text{grid},CM,y}$$

Where,

BE_y	=	Baseline Emissions in year y; tCO ₂
EG_{facility,y}	=	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh)
EF_{grid,CM,y}	=	CO ₂ emission factor of the grid in year y; tCO ₂ /MWh

EG_{facility,y} = The verification team has checked the entire monthly Credit Report /JMR for net electricity generated & supplied to the grid and crosschecked the same with the invoices raised by PP towards State Utilities for the monitoring period.

As per the registered PD the value of net electricity generation supplied to the grid as per Monthly Credit Note or Joint Meter Reading Report as per the instances in different states forms the basis for calculation of the emission reductions; which can be cross checked from the invoice raised to DISCOM.

Net electricity supplied to grid will be calculated as the difference of the measured values of "export" and "import" of electricity through the dedicated State electricity board (=SEB) energy meter (electronic tri-vector bidirectional main meter & check meter which measures both export & import concurrently) installed at the delivery point (i.e. the connected substation).

Net electricity generated and supplied by the project (Solar) plant/unit to the grid = Electricity Export to the grid - Electricity Import from the grid

Monthly meter readings are taken from the main and check meter installed at the substation and certified by the representatives of SEB Officials and the representatives of the project proponent during the billing cycle for each month of the monitoring period.

The Net electricity generation from the Solar plant for the individual instances is thus correct. All the parameters are monitored and recorded as per the monitoring plan in the registered PD. The verification team has crosschecked the revised emission reduction sheet and monitoring report data with the credit report/JMR sheet and invoice bills and found all the values are matching.

As the project activity is the installation of a new grid-connected Solar PV Power plant and does not involve any project emissions from fossil fuel, Thus, PE_y = 0.

As per methodology, for renewable energy projects, there is no any leakage emissions occurred, Hence, LE_y= 0

Thus,

$$ER_y = BE_y - PE_y - LE_y$$

Since PE_y=0, LE_y= 0- As per the registered PD

Therefore,

	ER _y = BE _y
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4.3 Quality of Evidence to Determine GHG Emission Reductions and Removals

Means of verification	The verification team checked the Calibration details of the monitoring meters with the calibration certificates.
Findings	CAR 06 was raised during the verification process. The description of the CAR and its closure is described below in Appendix 2 of this report
Conclusion	The metering arrangement is tri-vector bi-directional energy meters accuracy class 0.2s (main and check) at the State Electricity Board (SEB) substation for each project instances. These meters record several parameters including electricity exported & imported. These electricity meters are being used by state electricity board for JMR (Joint Meter Reading)/ credit report for electricity generation statements. During commissioning of the solar panels monitoring meters of accuracy class i.e. 0.2s were installed. The meters are monitored continuously & cumulative readings are taken at the end of the month by joint meter reading procedure. These are sealed by State Utilities to avoid malfunctioning with meter readings. Meter is calibrated once in 5 years by the meter testing division of the state utility board in the presence of O&M Contractor / investor's representatives and State Utilities officials to ensure the working of meter within permissible limits for each project instances. 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. No delayed calibration is observed and thus the same is found appropriate.

4.4 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	
1.	No risk	Nil	Not applicable	Complete verification of all the values indicated in the emission reduction spreadsheet in documents such as Credit reports/JMR/Invoices. No sampling approach adopted and complete site and verification is performed by the assessment team.

5 SAFEGUARDS

5.1 No Net Harm

No potential environment or socio-economic matter was found during the site visit. The project is renewable energy project and thus no negative impact observed onsite. CAR 07 is raised during the process and please refer Appendix 2 for the closure of the CAR.

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.

Moreover, the project is renewable energy project and as per the report of Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by Ministry of New and renewable energy (=MNRE, Govt of India) dated September 2013, solar project activity operations do not result in direct air pollution, noise pollution.

5.2 Local Stakeholder Consultation

All the stakeholders are happy with the implementation and operation of the project activity and no negative comments envisaged for the project activity. There was no change in project description from the registered VCS PD. Assessment team confirmed the same during the verification site visit. However CAR 04 is raised during the verification process. Please refer appendix 2 for the closure of the CAR

The interaction with some of the stakeholders during the site visit are presented below:

Name of the stakeholder	Punjab: Harpal Singh Chhattisgarh: Kamal Yadav Andhra Pradesh: Ajay Balakrishna
Occupation	Punjab: Farmer Chhattisgarh: Villager Andhra Pradesh: Farmer
DOE QUESTION: Did PP promised employment opportunity? Answer: Yes, PP told us that employment will be generated and the locals will be given priority. DOE also like to conclude that during the site visit it was observed that local people were employed for security and operation related work like water spraying, vegetation improvement and other unskilled work. DOE also found that skilled local persons were also employed by the organization for the operation and maintenance of the power plant.	

Name of the stakeholder	Telangana: S Raju Odisha: Sujeet Panigrahi Uttarakhand: Amit
Occupation	Telangana: Driver Odisha: Villager Uttarakhand: Farmer
DOE questions: Did the power plant discharge any harmful pollutants? Answer: NO the plant does not discharge any harmful pollutants. DOE questions: Did the power plant destroy any crop fields? Answer: The plant is implemented in barren land and there were no any fertile land or crop which is	

damaged.

6 VERIFICATION CONCLUSION

Applus+ Certification has been engaged by ACME group to perform the 2nd periodical verification of the “Solar Grouped project by ACME Group (EKIESL-VCS-Aug-16-01)”

The ACME group is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project’s Monitoring Plan in the registered VCS PD and the applied methodology ACM 0002 version 17.0 for large project instances and AMS.I.D version 18.0 for small scale project instances.

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. The verification can confirm that:

- the project is operated as planned and described in the project document;
- the monitoring plan is as per the applied methodology;
- the monitoring process in Monitoring Report is as per the PD
- the development and maintenance of records and reporting procedures are in accordance with the monitoring plan;
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately;
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements.

Verification period: 01-February-2017 to 30-November-2017 (inclusive 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)
01/02/2017 to 30/11/2017	614,147	0	0	614,147
Total	614,147	0	0	614,147

APPENDIX 1: DOCUMENTS REVIEWED OR REFERENCED (VERIFICATION)

No.	Author	Title	References to the document	Provider
1.	NA	Commissioning certificates of the Solar Panels implemented in the project site.	NA	Project participant
2.	NA	Contract of the project participant with the DOE	Contract document signed between PP and DOE	Project participant
3.	NA	Technical specifications of solar turbines from manufacturers	Manufacturer technical specifications	Project participant
4.	NA	Power Purchase agreement for the project activity	NA	Project participant
5.	NA	VCS MR	VCS MR version 1.0, dated 19/01/2018 VCS MR version 2.0, dated 05/02/2018	Project participant
6.	NA	Joint PD and MR- version 4.0 Final Validation and Verification report- Version 3.0	17/07/2017 18/07/2017	Project participant
7.	NA	The operational lifetime of the project activity from the manufacturer=(Technical specifications)	Manufacturer technical specifications	Project participant
8.	NA	Ministry of Environment and forest: www.envfor.nic.in UNFCCC www.cdm.unfccc.int CEA: Central electricity authority www.cea.nic.in VCS: Verified Carbon Standard www.v-c-s.org	Reference link is provided.	Independent Search
9.	NA	Tools/ guidelines used in the project activity - Tool to determine the remaining lifetime of the project activity in line with Annex 15 EB 50 - Tool to calculate the emission factor for an electricity system - Glossary of CDM terms version 7.0 - VCS verification report template version 3.4	UNFCCC CDM web site	UNFCCC
10.	NA	JMR/ Credit reports records for the complete monitoring period	JMR records	Project participant
11.	NA	Emission Calculation sheet version 1.0 Revised Emission Calculation sheet version 2.0	19/01/2018 05/02/2018	Project participant
12.	NA	Invoices for the complete monitoring period	Invoice for individual project instances	Project participant
13.	NA	Break down details of the complete monitoring period	Log sheet	Project participant
14.	NA	Undertaking letter from PP for double counting of	Letter dated 05/02/2018	Project

No.	Author	Title	References to the document	Provider
		emission reductions		participant

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

CAR ID	01	Date: 02/02/2018
Description of CAR		
During the site visit and subsequent document review it was observed that the details of feeder wise location of the solar panels is missing in the MR. Corrective action is sought in the respective section of the MR. The details implementation of the project activity timeline is missing in the MR. supporting documents are sought for the same.		
Project participant response		Date: 05/02/2018
The information related to feeder details are mentioned in Appendix 1 of revised MR. For Punjab state projects (74 MW), the project activity meters are connected to 66 kV supply line (CT/PT connected to 66 kV/110 V) and for rest sites the solar plants are connected at 132 kV/33 kV substation. The implementation status is mentioned in section 2.1 of MR.		
Documentation provided by project participant		
Revised MR and ER sheet		
DOE assessment		Date: 15/02/2018
The feeder information is now added in Appendix 1 of the revised MR version 02. The details as checked by the assessment team during the site visit matches with the details of Appendix 1. For Punjab state projects (74 MW), the project activity meters are connected to 66 kV supply line (CT/PT connected to 66 kV/110 V) and for rest sites the solar plants are connected at 132 kV/33 kV substation. The COD date against the commissioning certificate for the Solar power plant is checked and found correct. CAR is thus closed.		

CAR ID	02	Date: 02/02/2018
Description of CAR		
The breakdown details of the Solar Panels are missing in the MR. Moreover, the supporting document regarding the breakdown details are not provided to the assessment team. Corrective action is sought in this regard.		
Project participant response		Date: 05/02/2018
The Breakdown details are provided to DOE and same are included in MR.		
Documentation provided by project participant		
Revised MR and ER sheet Breakdown Details		
DOE assessment		Date: 15/02/2018
The breakdown detail of the power plant is checked and assessment team observed that scheduled maintenance and observed for the power plant in all the project instances and no unforced error occurred during the monitoring period. The log sheets for the individual project instances are checked and assessment team confirms that the project continues to run normally for the monitoring period. Appendix 2 is now mentioned in the MR version 02. Based on the revision, CAR is thus closed.		

CAR ID	03	Date: 02/02/2018
Description of CAR		
The comparison of actual VER and estimated VER is also missing in the MR. Corrective action is sought.		
Project participant response		Date: 05/02/2018
The comparison of estimated ER and actual ER are mentioned in section 4.4 of VCS MR. The current monitoring period is from 01/02/2017 to 30/11/2017 and involves 303 days. For 365 days, annual estimation of ER is 705,971 tCO ₂ and for 303 days, the same will be 586,053 tCO ₂ . The actual emission reductions are 614,147 tCO ₂ which is 4.79% higher than estimated. This is due to high PLF factor during current monitoring period. The PLF is not under control of PP. Though there is no change in project design, PP has checked the additionality and found that the higher PLF is within the		

threshold limit of PLF. Hence there is no any adverse impact on additionality.	
Documentation provided by project participant	
Revised MR and ER sheet	
DOE assessment	Date: 15/02/2018
The actual VER is compared with the estimated VER and assessment team observed that the actual emission reductions are 614,147 tCO₂ which is 4.79% higher than estimated. This is due to high PLF factor during current monitoring period. The PLF is not under control of PP. Though there is no change in project design, PP has checked the additionality and found that the higher PLF is within the threshold limit of PLF. Hence there is no any adverse impact on additionality. CAR is thus closed.	

CAR ID	04	Date: 02/02/2018
Description of CAR		
During the document review it is observed that “Local Stakeholder” status are missing in the MR. Moreover, supporting documents are not shared with DOE. Corrective action is sought in this regard in the respective section of the MR.		
Project participant response		Date: 05/02/2018
The below information is included in VCS MR for local stakeholder consultation section 2.4.1 of the MR As a part of continuous feedback from stakeholders, there were no other major comments or protest raised by the stakeholders and they were totally in support for setting up of these kinds of projects in the region. The PP also placed a grievance register onsite in where the stakeholder can put down his/her complain and the same if found genuine will be addressed immediately.		
Documentation provided by project participant		
Grievance Register details		
DOE assessment		Date: 15/02/2018
The grievance register for the monitoring period for each project instance is checked and no negative comments were observed from the stakeholders. Moreover, assessment team had an interaction with the local stakeholders and all of them are happy with the project activity as the same provides job opportunities for the local people. The implementation of each project instances thus improved there living standards and thus assessment team confirms that the		

local stakeholder are positive for project instances. CAR is thus closed.

CAR ID	05	Date: 02/02/2018
Description of CAR		
As per section 1.9 of the VCS MR, the project is not participated in other GHG program and has not intended to pursue credits from other GHG program for the concerned monitoring period. Supporting documents and details regarding the same is missing in the MR. Also, PP needs to justify whether REC benefits is taken for the present Monitoring period covered under VCS. Corrective action is sought for the same.		
Project participant response		Date: 05/02/2018
The undertaking from PP has been submitted for no any double accounting for current monitoring period and project activity is not participated any other GHG program other than VCS. The project activity is not availing any REC benefits and the same can be confirmed from publically available link of REC generators. https://www.recregistryindia.nic.in/index.php/general/publics/registered_regens		
Documentation provided by project participant		
Undertaking from PP for no double accounting and no REC benefits Revised MR and ER sheet		
DOE assessment		Date: 15/02/2018
The undertaking from the PP is checked and found correct by the assessment team. Moreover, assessment team also checked the REC (https://www.recregistryindia.nic.in/index.php/general/publics/registered_regens) registry and confirms that the project is not used any other form of green/white certification and thus acceptable to the assessment team. CAR is thus closed.		

CAR ID	06	Date: 02/02/2018
Description of CAR		
The calibration certificates for the complete monitoring period is missing. The details are also missing in the MR. Corrective action sought for the same		
Project participant response		Date: 05/02/2018
The calibration details are provided to DOE. Considering the 5 years calibration frequency, the calibration of meters are valid for current monitoring period and there is no delay in calibration. The VCS MR has mentioned calibration details in Appendix 1.		
Documentation provided by project participant		
Revised MR and ER sheet Calibration Details Calibration certificates		
DOE assessment		Date: 15/02/2018
The Calibration Certificates are checked by the assessment team and it is observed that there were no delay in calibration and project observed the calibration frequency as per the registered PD. The calibration details were also mentioned in APPENDIX1 of the revised MR. CAR is thus closed.		

CAR ID	07	Date: 02/02/2018
Description of CAR		
During the document review it is observed that “No net Harm” are missing in the MR. Moreover, supporting documents are not shared with DOE. Corrective action is sought in this regard in the respective section of the MR.		
Project participant response		Date: 05/02/2018
The report on “Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September 2013. This report clearly mentioned that solar project activity operations do not result in direct air pollution, noise pollution. Please refer below web link for the same.		

http://mnre.gov.in/file-manager/UserFiles/report-on-developmental-impacts-of-RE.pdf	
Documentation provided by project participant	
Revised MR and ER sheet	
DOE assessment	Date: 15/02/2018
The project is renewable energy project and as per the report of Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects" prepared by MNRE dated September 2013, solar project activity operations do not result in direct air pollution, noise pollution. The same is thus acceptable to the DOE and thus CAR is closed.	

CI ID	00	Date:
Description of CI		
Project participant response	Date:	
Documentation provided by project participant		
DOE assessment	Date:	

FAR ID	00	Date:
Description of CAR		
.		
Project participant response	Date:	

Documentation provided by project participant	
DOE assessment	Date:
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APPENDIX 3: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS
Verification team member

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

Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer (TR)	IR	Shen	Simon	Applus+ Certification
2.	Approver	IR	Sendin	Juan	Applus+ Certification B.U. Managing Director

Short CVs of the Team:

- Mr. Sukanta DAS, has done M. SC in (Electronics and Photonics) and M. Tech in (Energy technology) from Tezpur Central University/ Indian Institute of technology Bombay in India. He is a certified lead auditor for ISO 14001 EMS LA and ISO 9001 QMS LA from International registry for Certified Auditors (IRCA) and Certified Lean Management practitioner from Quality Council of India (QCI). He has more than Nine (9) years of working experience at TUV NoRD/ Re-consult/CRA/APPLUS certifications under various categories of projects stating from Renewable to waste to supercritical projects. He was JI/ CDM Lead Assessor in TUV NoRD and was involved in more than 100 CDM validation and verifications activities in Gold Standard, VCS, CDM projects as a team leader/technical reviewer / validator / verifier covering the sectoral scope 1, 13 technical areas 1.2/1.1/13.1. Currently he is associated with True Quality Certifications Private Limited and is empanelled with APPLUS certification to carry out GHG audit.
- Meng (Simon) Shen (Master Degree in Thermal Energy Engineering, Bachelor Degree in Environmental Engineering) is a Lead Auditor appointed by Applus+ LGAI for the GHG project assessment. He is based in Shanghai. He has several years of work experience in environmental protection field. Before he joined Applus+ LGAI, he had been worked for TÜV SÜD as a GHG Validator/Assessment team and ISO 9001/14001 Lead Auditor for 3.5 year.

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
JMR	Joint Metering reading
PP	Project Participant

APPENDIX 5: CALIBRATION DETAILS OF THE METERS

PP Name	MW	State	Project Location	Main Meter serial number	Check Meter Serial Number	Stand By Meter if available	Calibration Date
Mihit Solar Power Private Ltd.	25	Punjab	Kherakhurd	PBB48607	NA	NA	06-12-2016
Mihit Solar Power Private Ltd.	25	Punjab	Mankhera	PBB48603	NA	NA	06-12-2016
Mihit Solar Power Private Ltd.	24	Punjab	Jandekalan	PBB48610	PBB48609	PBB48611	10-12-2015
ACME Jaisalmer Solar Power Pvt. Ltd.	20	Andhra Pradesh	Raichotti	APX00910 & APX00913	APX00911 & APX00914	APX00912 & APX00915	26-04-2016
Aarohi Solar Pvt. Ltd.	50	Andhra Pradesh	Hindupur	APX00584	APX00585	APX00586	29-12-2015
Dayanidhi Solar Power Pvt. Ltd.	40	Andhra Pradesh	Shantipuram	APX00604	APX00605	APX00600	28-03-2016
Niranjana Solar Energy Pvt. Ltd.	20	Andhra Pradesh	Patthikonda	15196518 & 15196512	15196519 & 15196521	15196516 & 15197462	19-03-2016
Vishwatma Solar Energy Pvt Ltd.	30	Andhra Pradesh	Yemmiganur	15197463	15197470	15196511	19-03-2016
Acme Raipur Solar Power Pvt. Ltd.	30	Chattish-garh	Bagbera	MSP54469	NA	NA	07-12-2015
Dayakara Solar Power Pvt Ltd	30	Telangana	Maddur	APX00907	APX00908	APX00909	31-05-2016
Grahati Solar Energy Pvt Ltd	50	Telangana	Balanagar	APX00971	APX00972	APX00973	09-06-2016
Acme Odisha Solar Power Pvt Ltd	25	Odisha	Balongir	OPTO1170	OPTO1399	NA	24-06-2016
Eminent Solar	12.5	Uttarakhand	Uddham	UKD02407	UKD02412	NA	09/02/2017

Power Pvt Ltd.			Singh Nagar				
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Assessment team confirms that the calibration frequency of the energy meters are once in five year as per the registered PD. Hence, these calibrations are still valid during the current monitoring period from 01/02/2017 to 30/11/2017. As a result, error factor is not applicable to the Net electricity for individual project instances.

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