



RENEWABLE SOLAR POWER PROJECT BY ADANI



Document Prepared By

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

Project Title	Renewable Solar Power Project by Adani
Version	02
Report ID	A+SH_SYST_TQC_VCS_VER_1422

Report Title	Renewable Solar Power Project by Adani
Client	Adani Renewable Energy (RJ) Limited
Pages	42
Date of Issue	08-July-2022
Prepared By	LGAI Technological Center, S.A. (Applus+ Certification)
Contact	Campus UAB – Ronda de la Font del Carme, s/n 08193 Bellaterra – Barcelona (Spain) Tel: +34 93 567 20 08 Fax: +34 93 567 20 01

	www.appluscertification.com agustin.calle@applus.com carla.debat@applus.com
Approved By	LGA Technological Center S.A. (Applus+ Certification) VVB Technical Manager - Mr. Agustín Calle de Miguel
Work Carried Out By	Jitendra Mohan Singh - Lead Auditor / Technical Expert:

Summary:

Verification purpose: The main purpose of this project activity is to generate clean form of electricity through Solar power. Adani Renewable Energy (RJ) Limited has set up a 200 MW solar power project in the state of Rajasthan of India. The electricity generated from the project activity is sold to state electricity board via Unified Indian grid through Power Purchase Agreement. The project is registered with Project ID 2043¹. Start date of the project activity is the 02-August-2019. This is the date on which 100 MW solar project activity by Adani Green Energy (RJ) Limited was commissioned. The monitoring period for this VCS verification is taken from 01-January-2021 to 30-November-2021 (including both days) and the project activity achieved 445,217 tCO₂e emission reductions during this monitoring period thereon displacing 475,253.15 MWh amount of electricity from the generation-mix of power plants connected to the NEWNE regional grid (now Indian Grid), which is mainly dominated by thermal/fossil fuel-based power plant. Thus, VCS crediting period is of 10 years. Project activity start date of crediting period is 02-August -2019 and 01-August -2029 is the end date of the crediting period.

A risk-based approach has been followed to perform this verification activity. In the course of verification, 06 Corrective Action request (CAR) and 01 Clarification Requests (CLs) were raised and successfully closed. No FAR was raised during this verification. The review of the Monitoring report and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and PP have provided LGAI Technological Center S.A. (Applus+ Certification) with sufficient evidence to verify the fulfilment of the stated criteria of VCS.

LGA Technological Center S.A. (Applus+ Certification) (Hereafter referred as Applus+ Certification) has been appointed by “Adani Renewable Energy (RJ) Limited” to perform the 3rd periodic verification of the “Renewable Solar Power Project by Adani” under VCS standard version 4.2/^{10/} and guideline version 4.1/^{10/}. The objective of this verification activity is to have an independent third party for the assessment of the project design, monitoring report/^{6/}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 - Version 19”/^{18/}

¹<https://registry.verra.org/app/projectDetail/VCS/2043>

- the project's monitoring plan is assessed against "ACM0002 - Version 19"/^{18/}
- the projects compliance with, the requirements of Article 12 of the Kyoto Protocol, the CDM Modalities and Procedures as agreed in the Marrakech Accords under decision 3/CMP.1, the annexes to this decision, subsequent decisions and guidance made by COP/MOP & CDM Executive Board and other relevant rules, including the Host Country legislation and sustainability criteria along with VCS guideline version 4.1 /^{10/} and standard version 4.2 /^{10/}
- CDM validation and verification standard for project activities, Version 03 /^{16/}.
- VCS standard v 4.2 /^{10/}
- VCS program guideline v 4.1 /^{10/}

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

The scope of the verification is the independent and objective review of the Monitoring report (MR). The MR is reviewed against the relevant criteria (see above) and decisions by the CDM Executive Board and VCS executive board, including the approved baseline and monitoring methodology. The verification was based on the guidance given in the CDM validation and verification standard for project activities, Version 03.0 /^{16/}, review against registered Joint PD & MR/^{4/} and Final Validation report/^{4/} and VCS program guideline v 4.1 /^{10/} and standard version v 4.2 /^{10/}.

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 VCUs. The verification is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the monitoring report combined.

The only purpose of the verification is its usage during the issuance process as part of the VCS project cycle. Therefore, LGAI Technological Center S.A. (Applus+ Certification) can't be held liable by any party for decisions made or not made based on the verification opinion, which will go beyond that purpose.

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

1 CONTENTS

1	Introduction	6
1.1	Objective	6
1.2	Scope and Criteria	7
1.3	Level of Assurance	7
1.4	Summary Description of the Project	8
2	Verification Process.....	10
2.1	Method and Criteria	10
2.2	Document Review	12
2.3	Interviews	12
2.4	Site Inspections.....	13
2.5	Resolution of Findings	14
2.5.1	Forward Action Requests	15
2.6	Eligibility for Validation Activities	15
3	Validation Findings.....	15
3.1	Participation under Other GHG Programs	15
3.2	Methodology Deviations.....	15
3.3	Project Description Deviations.....	15
3.4	Grouped Project	18
4	Verification Findings.....	18
4.1	Project Implementation Status	18
4.2	Safeguards	22
4.2.1	No Net Harm	22
4.2.2	Local Stakeholder Consultation.....	23
4.3	AFOLU-Specific Safeguards	23
4.4	Accuracy of GHG Emission Reduction and Removal Calculations	23
4.5	Quality of Evidence to Determine GHG Emission Reductions and Removals	26
4.6	Non-Permanence Risk Analysis.....	27
5	VERIFICATION CONCLUSION.....	28
	APPENDIX 1: DOCUMENTS REVIEWED DURING VERIFICATION	30

APPENDIX 2: CORRECTIVE ACTION REQUESTS, CLARIFICATION REQUESTS AND FORWARD ACTION REQUESTS (CAR/CL/FAR)	32
APPENDIX 3: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS.....	38
APPENDIX 4: ABBREVIATIONS	40
AppENDIX 5: CALIBRATION DETAILS OF THE METERS	41
AppENDIX 6: DECLARATION FOR NO DOUBLE COUNTING	42

1 INTRODUCTION

1.1 Objective

LGAI Technological Center S.A. (Applus+ Certification) (Hereafter referred as Applus+ Certification) has been appointed by “Adani Renewable Energy (RJ) Limited” to perform the 3rd periodic verification of the “Renewable Solar Power Project by Adani Renewable Energy (RJ) Limited” under VCS standard version 4.2 ^{/10/} and guideline version 4.1 ^{/10/}. The objective of this verification activity is to have an independent third party for the assessment of the project design, monitoring report^{/6/} 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 - Version 19.0”^{/18/}
- the project's monitoring plan is assessed against “ACM0002 - Version 19.0”^{/18/}
- 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 4.1 and standard version 4.2 ^{/10/}
- CDM validation and verification standard for project activities, Version 03.0 ^{/16/}
- VCS standard v4.2 ^{/10/}
- VCS program guideline v4.1 ^{/10/}

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

1.2 Scope and Criteria

The scope is defined as an independent and objective review of the Monitoring report (MR) prepared as per the registered PD and registered approved methodology ACM0002 - Version 19^{/18/}. The MR is reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board and VCS standard 4.2 ^{/10/} and guideline version 4.1 ^{/10/}, including the approved baseline and monitoring methodology ACM0002 - Version 19^{/18/}. The verification was based on the requirements in the CDM validation and verification standard ^{/16/} for project activities, Version 03 ^{/10/} and VCS program guideline v 4.1 ^{/10/} and standard version 4.2 ^{/10/}.

The verification is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the Monitoring report. In line with Guidelines for Application of materiality in verifications, the verification team has conducted a complete verification of all the information presented in the monitoring report and data monitored as presented in the Emission reduction^{/7/} calculation spread sheet. It follows the paper trail back to the raw data such as meter reading records and Invoices ^{/11/}. There are no material errors, overestimation of ER, omission or misstatement. Verification team conducted Remote audit due to pandemic situation and equipment's, technical details and metering/monitoring arrangement verified through photos/certificate shared by PP. The verification team has reviewed all the documents like commissioning certificates/^{1/}, technical specification, O&M practices, Regional Energy Account (REA) Statement/REA report ^{/11/}, Invoices ^{/11/}, training records, grievance registers, photos etc.

1.3 Level of Assurance

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

In our opinion, the estimated GHG emissions reductions were calculated correctly on the basis of the approved baseline and monitoring methodology "ACM0002 - Version 19"^{/18/} and the VCS standard.

1.4 Summary Description of the Project

The project activity involves installation of solar power plant total generating capacity of 200 MW, at Rajasthan state of India. This project activity is with Adani Renewable Energy (RJ) Limited. The Power house of the project activity lies between Lat. 27° 23' 51.20" N and Long. 72° 13' 47.59" E location complete detail of location as below: -

Name of the SPV	Capacity (MW)	Commissioning Date	Village	Taluka	District	State
Adani Renewable Energy (RJ) Limited	100 MW	02-August-2019	Rawra, Bhiv Ji ka Gaon & Hanuwan t Nagar	Bap	Jodhpur	Rajasthan
	100 MW	21-August-2019				

The electricity generated by the project is exported to the Unified Indian electricity grid. The project activity therefore displaced an equivalent amount of electricity which would generate by fossil fuel dominant electricity grid. The PP has entered into long term power purchase agreement with the Maharashtra State Electricity Distribution Co. Ltd. and Adani Renewable Energy (RJ). Since Solar power is Greenhouse Gas (GHG) emissions free, the power generated prevents the anthropogenic gas emissions generated by fossil fuel based thermal power stations comprising coal, diesel, furnace oil and gas.

The Commissioning details of 200 MW solar project activity given in above table. Same is verified with copies of Commissioning certificates provided by PP to assessment team.

Assessment team confirms following during the verification Remote audit:

1. Start date of the project activity is 02-August-2019 as mentioned in the registered VCS PD & MR ^{/4/}.
2. An undertaking letter dated 11-January-2022 has been submitted by PP for double counting with any other GHG program. PP also has given a written Declaration ^{/12/} that project has not claimed other form of GHG credit for the concerned monitoring period. Assessment team also checked that the projects are not registered under the REC mechanism of India and the same can be cross-checked at <https://recregistryindia.nic.in>. PP has given a written Declaration ^{/12/} that the credit claimed under VCS for the current monitoring period is not claimed under any other GHG mechanism.
3. Assessment team confirms that this is the 3rd monitoring under VCS and covers the activity from 01-January-2021 to 30-November-2021 (inclusive of both dates). The Crediting Period of the project activity is from 02-August-2019 to 01- August -2029 which will be renewed twice.

Start date of crediting period for VCS verification: 02-August-2019 (Date of commissioning of first 100 MW plant)

The GHG credits from 01-January-2021 to 30-November-2021 will be claimed under VCS only. At any point of time during the crediting period, the project proponent will abide by the "Double Counting".

4. Assessment team checked and found that the Project proponent of the project activity is as below for the current monitoring period:

Adani Green energy Limited is the project proponent (PP) of the project activity and they have formed SPV which have the legal right to control and operate the project activity.

Organization name	Adani Green Energy Limited
Contact person	Mr. Alpesh Gedia
Title	Associate Manager- Business Development
Address	4 th Floor - South Wing Adani House, Shantigram, SG Highway, Ahmedabad, India
Telephone	+919907534900
Email	alpeshk.gedia@adani.com

5. Assessment team also checked the details of other entity and found correct. The details are as below:

Organization name	EKI Energy Services Limited
Contact person	Project Consultant
Title	CEO & MD
Address	EnKing Embassy, Office No 201, Plot 48, Scheme 78, Part 2, Vijay Nagar, Indore- 452010, Madhya Pradesh, India
Telephone	+91-731-4289086
Email	registry@enkingint.org;

6. The quantified Emission reduction⁷/calculation for the monitoring period is correct and conservative. Assessment team also compared actual VCUs with the estimated VER and found that the actual VER (445,217 tCO₂e) is 11.13% higher than the estimated emission reduction² (437,825 tCO₂e). which is due to natural phenomena and higher PLF which cannot be controlled by the Project Proponent. Further, as per the registered PDD, the Equity IRR without VCS for the project activity is 8.89 % and the Benchmark Equity IRR is 14.18%. The PLF considered at the time of validation is 27.29% as per the

²Calculated for monitoring days involved.

DPR of the project activity. The average achieved PLF for the current monitoring period from 01-January-2021 to 30-November-2021 is 29.59%. Upon using this PLF for the IRR calculations, the Equity IRR comes out to be 10.3% which is well below the benchmark. Verification team observed the same is correct and does not breach the additionality. hence accepted.

2 VERIFICATION PROCESS

2.1 Method and Criteria

Verification Process: The project assessment is based on the “CDM validation and verification standard for project activities, Version 03 /¹⁶/ and “VCS standard v4.2/¹⁰/ and program guideline version 4.1/¹⁰/” and is conducted using standard auditing techniques to assess the correctness of the information provided by the project participants. Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), and relevant host country experience for evaluating the VCS project activity are appointed.

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

1. A desk review of the Monitoring report against the registered Joint PD & MR and Joint Validation & Verification report/⁴/;
2. Follow-up interviews with project participant;
3. The resolution of outstanding issues and the issuance of the final verification report/⁴/ and opinion.

The prepared verification report/⁴/ and other supporting documents then undergo an internal quality control at the HQ (Accredited office) before being submitted to the VCS executive board.

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

Appointment of the assessment team

According to the sectoral scope / technical area and experience in the sectoral or national business environment, Applus+ Certification has composed a project assessment team 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
Jitendra Mohan Singh	LA/TE	YES	YES	NA	YES
Mr. Denny Xue	TR	YES	YES	NA	NA

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

Document review

The Monitoring report version 1 submitted by the PP was reviewed against the approved methodology, registered PD, final Validation report^{4/} and other relevant criteria to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources has been done. A complete list of all documents and evidence material reviewed is included in this report below in Appendix 1.

Follow-up interviews

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

Resolution of Clarification and Corrective Action Request

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

The final MR^{/6/} (Version 04) submitted by PP serves as the basis for the final assessment presented. Additional changes to the project during the verification process are not considered to be significant with respect to the main CDM/VCS objectives. The two CDM/VCS main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

Internal quality control

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

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

2.2 Document Review

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

2.3 Interviews

The key personnel interviewed are summarized in the table below:

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Singh	Arvind	Site-In-Charge, Adani Renewable Energy (RJ) Limited	15-February-2022 (Remote Audit via MS Teams)	Project Implementation, Regional Energy Account (REA) Statement & invoicing procedure, calibration, grievance mechanism Management practices, data storage, Mechanical and electrical maintenance, O&M practices, REGIONAL ENERGY ACCOUNT (REA) STATEMENT etc.	Jitendra Mohan Singh (Team Leader)

2.	Sinha	Ms. Ishani	EKI Energy Services Limited, Consultant		MR and ER preparation, Data collection, data storage, QA/QC GHG calculations, MR and ER preparation, Data collection, data storage, QA/QC Management practices	
----	-------	------------	---	--	--	--

2.4 Site Inspections

The verification team has not performed the onsite visit for the verification of this project activity. The exemption for conducting an onsite visit for this project activity is allowed by VERRA, as the VCS has not a specific requirement to perform the site visits, however, an adequate level of assurance has been achieved during the verification processes. The reason for not conducting the onsite visit is the assessment for verification has been conducted during the COVID-19 pandemic, hence, this fact sums to the necessity of avoiding traveling to the site, given the restrictions in the countries in which the assessment team is based, and the ones applicable in the host country of the PA, apart from globally applied Applus+’ restrictions to its personnel and contractors during the pandemic.

The VVB has taken alternative measures for ensuring a reasonable level of assurance while conducting the Verification process, using standard auditing techniques and advanced communication solutions in order to be able to interview the relevant stakeholders and to cross-check the relevant documentation, implementation of the project activity and its design, monitoring performance, equipment in the project activity, etc. (all the evidences and processes of cross-check are detailed within this Verification Report). The interviewed personnel and the scope and mean of interview are listed in above Section 2.3 of this Verification Report.

Technical details & metering/monitoring arrangement verified through onsite photographs/^{19/} name plates and calibration certificates shared by PP. All the documents were cross checked to ensure conservative estimation of emission reduction.

During the remote audit, the PP representatives were questioned about the implementation of the project activity. Several topics like the verification of commissioning date of meters, the generation, recording, and monitoring of the data and the error accountability were discussed. To cross check the information provided by PP, various documents like technical specifications, commissioning certificates, PPA, JMR sheets, invoice, calibration certificates, etc. were also verified.

During the remote audit, the PP representatives/ O & M personal were questioned about the implementation of the project activity. Several topics like the verification of commissioning date of meters, the generation, recording, and monitoring of the data and

the error accountability were discussed. Various documents like the Monthly statement-Regional Energy Account (REA) Statement & monthly Invoices/^{11/} for the complete monitoring period, on-site Photographs includes solar PV panels name plates/^{19/}, meter specifications, key technical specifications/^{3/} of the major equipment like panel etc. provided to assessment team were verified through MS Teams (live video call) to establish the current status and the implementation of the Project Activity

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/^{6/} Version 04 submitted by PP serves as the basis for the final assessment presented. Additional changes to the project during the verification process are not considered to be significant with respect to the main CDM/VCS objectives. The two CDM/VCS main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

Areas of validation and verification findings	No. of CL	No. of CAR	No. of FAR
Project design document and Monitoring report	01	01	00
Description of project activity	00	01	00
Application of selected baseline and monitoring methodology and selected standardized baseline			
Applicability of methodology and standardized baseline	00	00	00
Deviation from methodology	00	00	00
Clarification on applicability of methodology, tool and/or standardized baseline	00	00	00
Project boundary	00	00	00
Establishment and description of baseline scenario	00	00	00
Demonstration of additionality	00	00	00
Emission reductions	00	01	00
Calibration details	00	01	00
Monitoring plan	00	00	00
No Net harm assessment	00	00	00
Local stakeholder consultation	00	01	00
Others: - SDGs	00	01	00
Total	01	06	00

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

2.5.1 Forward Action Requests

This is 3rd periodic verification of the project activity and no FAR was raised from validation or previous verification and during this verification.

2.6 Eligibility for Validation Activities

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

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The project is not registered any other GHG programs. The same is confirmed by check the UNFCCC web site. The project activity is not availing any REC benefits and the same can be confirmed from publicly available link of REC generators.

Web-link: https://www.recregistryindia.nic.in/index.php/publics/registered_regens

Further, the project proponent has provided Declaration /^{12/} undertaking for not availing other forms of environmental credit including REC for the same crediting period under consideration.

3.2 Methodology Deviations

The project activity has applied correct methodology which are as per the VCS PD. Verification team has checked the verification records of previous monitoring periods and confirmed that there is no request for methodology deviation applied neither during this monitoring period nor during previous monitoring periods.

3.3 Project Description Deviations

Deviation 1. Deviation has been requested by PP as the connectivity details given in the Commissioning Certificate issued by the state utility, Maharashtra State Electricity Distribution Company Limited (MSEDCL): -

Metering Equipment installed at Sending end at the 33 kV Grid Substation)

125 MW Main Meter:	RE-0001-A
125 MW Check Meter:	RE-0002-A
125 MW Standby Meter:	RE-0003-A
75 MW Main Meter:	RE-0004-A
75 MW Check Meter:	RE-0005-A
75 MW Standby Meter:	RE-0006-A

The above meters have been installed at Sending end at the 33 kV Grid Substation) and used for data collection and scheduling readings. Also, in reference to the Power Purchase Agreement signed by PP with the State Utility, for the purpose of energy accounting the power producer shall install ABT compliant meter at the metering point which have been mentioned above.

Meters for which deviation requested based on commissioning certificate have been installed at Bhadla Substation The same was confirmed during the interview, however as per PP, It is to be noted that initially, at the time of validation of project activity, the following meters were taken as part of the Monitoring plan. These are installed at the interconnecting point which is Bhadla Substation owned by the Power Grid Corporation of India Limited (PGCIL).Initially, at the time of validation of project activity, the following meters were taken as part of the Monitoring plan.

S. No. of Main Meter: 4517-A
S. No. of Check Meter: 4512-A
S. No. of Standby Meter: 3649-A

The above meters were installed at the interconnecting point which is Bhadla Substation owned by the Power Grid Corporation of India Limited (PGCIL).

PP has requested deviation for change in meters in monitoring plan being the aforesaid meters at the PGCIL substation are beyond the control of Project Proponent because they are owned and operated by PGCIL and PP does not have any role in their calibration and monitoring of data.

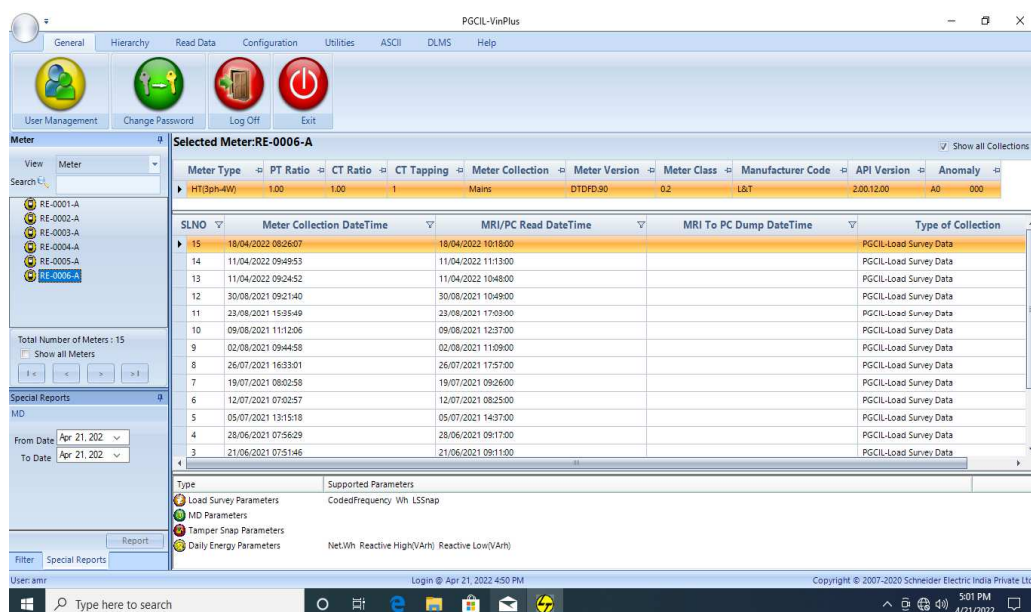
The current Billing procedure is as below: -

- In case of Inter-State grid connected RE projects, billing/invoicing is done based on REA basis which is issued by Regional Power Committee. In this process, there is no joint metering done by govt. officials and project representative, entire process is automated. As this project is located in Rajasthan and delivering electricity to Maharashtra (PPA signed with MSEDCL), thus, this project is also categorized as Inter-State project.
- In the grid inter-connection point i.e. at grid sub-station, ABT meters mentioned below are located and capturing the actual export and import of electricity from the project.
 - 125 MW Main Meter: RE-0001-A
 - 125 MW Check Meter: RE-0002-A
 - 125 MW Standby Meter: RE-0003-A
 - 75 MW Main Meter: RE-0004-A
 - 75 MW Check Meter: RE-0005-A
 - 75 MW Standby Meter: RE-0006-A
- After specific interval (presently, once in a week, however, can also be changed as per DISCOM's decision), project representative electronically download the

generation report from the ABT meter and upload the same on Northern Regional Load Dispatch Centre's dedicated web-interface.

- Based on the encrypted generation report, Northern Regional Power Committee issue the REA which mentioned actual net electricity injected by the project for that specific month. Post issuance of REA, project proponent is issuing the monthly invoice for billing purpose.

The meters locations have been verified with SCADA page which shows 6 No. of meters. These meters are the source of data for all Energy Accounting of the project activity. These have been installed at project end and the PP has access to them for collection of data and calibration as well.



The screenshot displays the PGCIL-VinPlus software interface. The 'Selected Meter: RE-0006-A' is highlighted. The interface shows a table of meter data with columns: SLNO, Meter Collection DateTime, MRI/PC Read DateTime, MRI To PC Dump DateTime, and Type of Collection. The data rows show various collection dates and times, all resulting in 'PGCIL-Load Survey Data'.

SLNO	Meter Collection DateTime	MRI/PC Read DateTime	MRI To PC Dump DateTime	Type of Collection
15	18/04/2022 08:26:07	18/04/2022 10:18:00		PGCIL-Load Survey Data
14	11/04/2022 09:49:53	11/04/2022 11:13:00		PGCIL-Load Survey Data
13	11/04/2022 09:24:52	11/04/2022 10:48:00		PGCIL-Load Survey Data
12	30/08/2021 09:21:40	30/08/2021 10:49:00		PGCIL-Load Survey Data
11	23/08/2021 15:35:49	23/08/2021 17:03:00		PGCIL-Load Survey Data
10	09/08/2021 11:12:06	09/08/2021 12:37:00		PGCIL-Load Survey Data
9	02/08/2021 09:44:58	02/08/2021 11:09:00		PGCIL-Load Survey Data
8	26/07/2021 16:33:01	26/07/2021 17:57:00		PGCIL-Load Survey Data
7	19/07/2021 08:02:58	19/07/2021 09:26:00		PGCIL-Load Survey Data
6	12/07/2021 07:02:57	12/07/2021 08:25:00		PGCIL-Load Survey Data
5	05/07/2021 13:15:18	05/07/2021 14:37:00		PGCIL-Load Survey Data
4	28/06/2021 07:56:29	28/06/2021 09:17:00		PGCIL-Load Survey Data
3	21/06/2021 07:51:46	21/06/2021 09:11:00		PGCIL-Load Survey Data

The deviation doesn't have any impact on additionality, methodology applicability, monitoring methodology and calculation of emission reductions. The nature of deviation is permanent.

Deviation 2. The Make and Capacity of the Modules installed at site have been updated as per the Commissioning Certificate issued by the State Utility:

Module Make- MSPVL, Jinergy, Chint

Capacity- 325Wp, 330 Wp, 335 Wp

Deviation 3. As per Joint PD & MR (Section 4.2), the source of data (EG_{PJ,y}) is Regional Energy Account statement issued by WRPC. However, The Source of the data is the Monthly REA statements are issued by Northern Regional Power Committee instead of Western Regional Power Committee. Hence, PP has requested deviation as per the current site practice. The deviation doesn't have any impact on additionality, methodology applicability, monitoring methodology and calculation of emission reductions. The nature of deviation is permanent.

Deviation 4. In registered PD, it has been mentioned that in case of failure of both main meter and check meter, sum of the net electricity generation recorded by three individual

special energy meters (SEMs) and individual auxiliary meters shall be used for accounting and billing purpose. However, there are no auxiliary meters installed in project activity. Only meters mentioned in deviation #1 is located at the plant site.

The deviation doesn't have any impact on additionality, methodology applicability, monitoring methodology and calculation of emission reductions. The nature of deviation is permanent.

Deviation 5. Verification team found during current verification the cross-check process is not consistent with the Joint PD and MR submitted, MR and supporting documents (invoices). As per PD, the cross check is to be done with the Monthly Generation Reports but invoices have been considered for the same in ER sheet and MR. However as per current site practice, the power sale invoices are used for cross checking the Quantity of net electricity generation supplied by the project plant/unit to the grid instead with the Monthly Generation Report. The monthly sales invoices being more reliable source for cross check as the same is raised by PP to the utility every month. Thus, deviation request is acceptable.

The deviation doesn't have any impact on additionality, methodology applicability, monitoring methodology and calculation of emission reductions. The nature of deviation is permanent.

There is no other deviation applied during this verification.

3.4 Grouped Project

The project is not a grouped project thus this is not applicable.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

During the Remote audit interviews with PP & plant in-charge and subsequent document verification; commissioning certificates^{/1/}, PPA^{/9/}, Regional Energy Account (REA) statement^{/11/} and Invoices^{/11/}, it was concluded that the project is implemented as per the requirement of the registered VCD PD & MR^{/4/} and approved monitoring plan. During the current monitoring period, it was observed that no unforeseen incident/event evolved which can impact the operation of the project activity which was verified from breakdown records. The project undergone continuous operation and only scheduled maintenance is observed as per the manufactures specification which is acceptable to the assessment team and evident from Regional Energy Account (REA) Statement^{/11/}.

The project activity involves total capacity of 200 MW solar power project which are installed in Rajasthan state of India.

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

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

The Technical specifications^{/3/} have been verified during remote audit as well as with the technical specifications^{/3/} of solar PV and also cross checked from the technical manual of the Manufactures. The technical specification the project activity is given below:

Sl. No.	Technical details of the equipment	Description
1	Technology Used	Solar PV technology (Poly-Crystalline)
2	Module Make, Number of modules and their capacity	Module Make ³⁻ MSPVL, Jinery, Chint No. of Modules- 851424 Capacity- 325Wp. 330 Wp, 335 Wp
3	Inverter Make, Number of Inverters & Capacity	Inverter Make- Huawei Technologies No. of Inverters- 2,223 Inverter capacity- 90 KW

The project was commissioned on 02-August-2019 which is date of commissioning for first 100 MW project activity. Assessment team checked the commissioning certificates ^{/01/} and confirmed that the dates of Commission for the plant sites are correct.

The assessment team confirmed that there is no proposed or actual change to the project design during this monitoring period except project description changes requested by PP. The project design as mentioned in the registered Joint PD & MR ^{/4/} is implemented and thus the same is acceptable to the assessment team. All required monitoring equipment's and procedures as mentioned in the registered PD are available and implemented in an appropriate manner.

The organisational role and responsibility as mentioned in the registered PD is followed remotely. All the emergency preparedness as mentioned in the registered PD is followed onsite and no discrepancies were found regarding the same. All the monitoring equipment was calibrated once in three year and thus complied with registered monitoring plan.

The Project participant contribution from the project activity towards sustainable development in accordance to host country.

Contribution to sustainable development:

³ As per the Commissioning Certificate issued by the state utility

Ministry of Environment and Forests, has stipulated economic, social, environment and technological well-being as the four indicators of sustainable development. The project contributes to sustainable development using the following ways.

Social well-being: The project would help in generating employment opportunities during the construction and operation phases. The project activity will lead to development in infrastructure in the region like development of roads and also may promote business with improved power generation.

Economic well-being: The project is a clean technology investment in the region, which would not have been taken place in the absence of the VCS benefits the project activity will also help to reduce the demand supply gap in the state.

Technological well-being: The successful operation of project activity would lead to promotion of Solar based power generation and would encourage other entrepreneurs to participate in similar projects

Environmental well-being: Solar being a renewable source of energy, it reduces the dependence on fossil fuels and conserves natural resources which are on the verge of depletion. Due to its zero emission the Project activity also helps in avoiding significant amount of GHG emissions and specific pollutants like Sox, Nox, and SPM associated with the conventional thermal power generation facilities

Further, as confirmed during the remote audit, the project displaces electricity produced in fossil fuel-based power plants, by using clean renewable source to generate electricity and thereby contributes to sustainable development through reduction in greenhouse gas (GHG) emissions. It has also been confirmed that the project implementation has led in contribution to SDG 07, 08 and SDG 13 (as stated in Section 1.11 of the submitted MR). The project supplies clean, affordable and renewable energy (475,253.15 MWh net electricity under the monitoring period) without reliance on fossil fuels for generation of electricity to meet the growing demands in the region. The generated electricity avoided release of 445,217 tCO₂ in to the atmosphere. The Project Proponent has targeted to employ 20 persons by the year 2025 and minimum 1 person per annum after 2025.

Further, the project activity has not participated under any other GHG program, apart from Verified Carbon Standard and REC. PP will not claim benefits of carbon emission reduction credits achieved through this project activity under any other GHG programme for the crediting period claimed under VCS. Moreover, the project has not generated any other form of environmental credit and a Declaration^{12/} for the same has been submitted to the assessment team and the same is acceptable. The project is not registered under the REC mechanism of India and the same is cross-checked at <https://recregistryindia.nic.in>.

Assessment team confirms following during the verification remote audit

1. Start date of the project is 02-August-2019.
2. An undertaking has been submitted by PP for no double counting with any other GHG program. PP also has given a written declaration that project will not claim other form of GHG credit for the concerned monitoring period.

3. Assessment team confirms that this is 3rd monitoring under VCS and covers the activity from 01-January-2021 to 30-November-2021 (inclusive of both dates). VCS crediting period is of 10 years (which can be renewed for maximum 2 times) with 02-August-2019 as the start date and crediting period end date as 01-August-2029. The VCUs for this monitoring period i.e., from 01-January-2021 to 30-November-2021 will be claimed under VCS only. At any point of time during the crediting period, the project proponent will abide by the “Double Counting”. PP have submitted declaration^{/12/} on the dated 11-January-2022 for avoiding double counting of the emission reductions achieved during this monitoring period.
4. Assessment team checked and found that the Project proponent of the project activity is as below for the current monitoring period:

Organization name	Adani Green Energy Limited
Contact person	Alpesh Gedia
Title	Associate Manager- Business Development
Address	Adani House, Nr Mithakhali Six Roads, Navrangpura, Ahmedabad 380009, Gujarat, India
Telephone	+919907534900
Email	alpeshk.gedia@adani.com

5. Assessment team also checked the details of other entity and found correct. The details are as below

Organization name	EKI Energy Services Limited
Contact person	Project Consultant
Title	Manish Dabkara
Address	CEO & MD
Telephone	EnKing Embassy, Office No 201, Plot 48, Scheme 78, Part 2, VijayNagar, Indore- 452010, Madhya Pradesh, India.
Email	manish@enkingint.org

6. The quantified Emission reduction^{/7/} calculation for the monitoring period is correct and conservative. Assessment team also compared actual VCUs with the estimated VCUs. The estimated emission reduction for the current monitoring period is 400,639

tCO_{2e} (437,825 tCO_{2e} / 365 days X 334 days), whereas actual emission reduction achieved by the PA is 445,217 tCO_{2e} which is 11.13% Higher than the estimated Emission reduction^{7/} the increase in emission reduction is due to variations in climatic conditions, grid availability and other parameters which are not in the control of PP. From the generation data it was observed that the PLF achieved during this monitoring period for all plant site are higher than estimated. As per the registered PDD, the Equity IRR without CDM VCS for the project activity is 8.89 % and the Benchmark Equity IRR is 14.18%. The PLF considered at the time of validation is 27.29% as per the DPR of the project activity. The average actual PLF for the current monitoring period from 01-January-2021 to 30-November-2021 is 29.59%. Upon using this PLF for the IRR calculations, the Equity IRR comes out to be 10.3% which is well below the benchmark. Thus, it is concluded that the project activity is still additional though 11.13% higher Emission reduction^{7/} achieved as higher PLF does not crosses the breaching point.

CL 01, CAR 01, CAR 02 and CAR 03 was raised during the verification process and closed successfully. Please refer Appendix 2 of this report for the detail closure of the CL and CAR.

4.2 Safeguards

4.2.1 No Net Harm

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

The project activity promotes environmental and socio-economic well-being as it results in zero GHG emissions due to installation and operation of clean, renewable energy technology for electricity generation. The report on “Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September 2013⁴. This report clearly mentioned that solar/Wind power project activity operations do not result in direct air pollution, noise pollution. Moreover, also as per the Central Pollution Control Board of India notification⁵ solar/wind project falls under White Category and are practically non-polluting.

⁴ <https://smartnet.niua.org/sites/default/files/resources/report-on-developmental-impacts-of-RE.pdf>

⁵ http://envfor.nic.in/sites/default/files/Latest_118_Final_Directions.pdf

4.2.2 Local Stakeholder Consultation

Local stakeholder consultation has been conducted at the time of project registration. For on-going stakeholders' communication, PP have maintained feedback/complaint register at the site office. Assessment team checked the copies of grievance registers submitted by PP which are available at sites and found that local stakeholders can anytime lodge their grievances if any in the register over the operational life time of the project. During interviews with PP, it was confirmed that Site Manager/In-charge is responsible to address any grievances received from stakeholders. During current monitoring period no grievance was received. Thus, assessment team is of the opinion that the on-going stakeholder mechanism is adequate and appropriate. CAR 04 was raised during the verification process and closed successfully. Please refer Appendix 2 of this report for the detail closure of the CAR.

4.3 AFOLU-Specific Safeguards

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

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

Means of verification	The verification team assessed whether the data and calculations of GHG Emission reduction/ ^{7/} 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 05 was raised during the verification process and closed successfully. Please refer Appendix 2 of this report for the detail closure of the CAR.
Conclusion	Baseline Emissions: The baseline Emissions for a given year is calculated by multiplying the energy baseline with the grid emission factor. The grid in this case would be the 'Indian Grid' Formula Used: - $BE_y = EG_{PJ,y} * EF_{grid,CM,y}$ Where , BE_y = Baseline Emissions (tCO₂/year) $EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the VCS 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" (tCO₂e/MWh). Ex-ante Parameter:

	EF_{grid,OM,y}= Operating Margin CO₂ emission factor in year y. Parameter is fixed ex-ante for the entire crediting period and as per the validated VCS PD same is fixed 0.9610 tCO₂/MWh. Verification team found same was used in the ER calculations EF_{grid,BM,y}= Build Margin CO₂ emission factor in year y . Parameter is fixed ex-ante for the entire crediting period and as per the validated VCS PD same is fixed 0.8644 tCO₂/MWh. Verification team found same was used in the ER calculations EF_{grid,CM,y}= Combined Margin CO₂ emission factor in year y . Parameter is fixed ex-ante for the entire crediting period and as per the validated VCS PD same is fixed 0.9368 tCO₂/MWh. Verification team found same was used in the ER calculations. EF_{grid,CM,y}, EF_{grid,BM,y}, EF_{grid,OM,y} were mentioned as ex-ante fixed parameter. Assessment team checked the values, source of data, choice of data, purpose of the data mentioned in the MR^{/6/} from the registered VCS PD & MR^{/4/} and confirms that the similar approach was considered for the current monitoring period also. <u>Ex-post parameter:</u> As per the registered monitoring plan and requirement of the registered methodology following parameters needs to be monitored: EG_{PJ,y}: Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh (MWh/yr) As the value of net electricity generation supplied to the grid as per monthly record of Regional Energy Account (REA) statement issued by Northern Regional Power Committee (NRPC) Load Despatch Center data for calculation of the Emission reduction^{/7/}; which can be cross checked from the invoice raised to Maharashtra State Electricity Distribution Co. Ltd (MSEDCL). The Regional Energy Account (REA) Statement (Report by the Northern Regional Power Committee) shows transaction of net electricity (export as scheduled) at the Injecting Utility Boundary. Hence the same scheduled value of electricity is used by PP for invoicing as well. The source of data is therefore in accordance to registered Joint VCS PD & MR^{/4/} and thus acceptable to the assessment team. Electricity exported by the project to the grid at project site switch yard is the actual generation recorded and monitored by the metering system installed at the project site switch yard. Monthly meter readings are taken from the main and check meter installed at the switch yard and installed by Power Grid Corporation of India Limited and the representatives of the project proponent during the billing cycle for each
--	--

	month of the monitoring period. During current monitoring period, Total Net electricity exported to the grid is 475,253.15 MWh, The same has been checked with the monthly Regional Energy Account (REA) Statement /11/ and found correct. The verification team has crosschecked the net electricity exported to grid with as mentioned in revised emission reduction sheet and monitoring report with monthly invoices and found consistent. All the parameters are monitored and recorded as per the monitoring plan in the registered Joint PD & MR. Moreover, for solar power project (Green field renewable project) as per the registered PD and approved methodology ACM0002 Version19, project emission is zero for the current monitoring period. The calculation approach as described above is used for baseline emission calculation only. As project emission is zero thus Emission reduction^{7/} for current monitoring period is baseline emission for the current monitoring period. The project activity involves in harnessing Solar power. So, the emissions from the project are zero. As per the applied methodology, emission reductions are calculated as follows: $ER_y = BE_y - PE_y$ Where: $ER_y = \text{Emission reductions in year } y \text{ (tCO}_2\text{e/yr)}$ $BE_y = \text{Baseline emissions in year } y \text{ (tCO}_2\text{e/yr)}$ $PE_y = \text{Project emissions in year } y \text{ (tCO}_2\text{e/yr)}=0$ Hence, $ER_y = BE_y$ $BE_y = 475,253.15 \text{ MWh} * 0.9368 \text{ tCO}_2\text{e/MWh}$ $= 445,217 \text{ tCO}_2\text{e (round down values)}$ PE_y = As per ACM0002 - Version 19^{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 Solar project emissions (PE_y) are taken as zero. Leakage: As per ACM0002 - Version 19^{18/}, Leakage emissions are not considered for the project activity. Hence, $ER_y = BE_y - PE_y$ $= 445,217-0$ $= 445,217 \text{ tCO}_2\text{e}$
--	--

	Verification team confirms that the monitoring has been carried out in accordance with the monitoring plan contained in the registered VCS PD. Assessment team confirmed that the GHG emission reductions and removals have been quantified correctly in line with the registered VCS PD.
--	---

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

Means of verification	The verification team checked the Calibration details of the monitoring meters with the Calibration Certificates/5/.
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, check and Standby) at the respective State Electricity Board (SEB) substation. These meters record several parameters including electricity exported & imported. These electricity meters are being used by state electricity board for Regional Energy Account (REA) Statement^{/11/}. The details of meter are provided in Appendix 5 of this report. No delayed calibrations were observed in the project activity for this monitoring period. All the meters are of same accuracy class i.e., 0.2s as per the requirement of the registered PD. On-site photographs and interview during Remote audit ^{/19/} with O&M personnel also confirms the same. During commissioning^{/1/} of the solar plant 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 in the presence of O&M Contractor / investor's representatives and State Utilities officials to ensure the working of meter within permissible limits. 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^{/5/} submitted by PP and found that calibration frequency of 5 years is complied. Thus, no delayed calibration is observed and thus the same is found appropriate. Calibration details are mentioned in Appendix 5 of this report. The plant logbook sheet^{/13/} is checked and there is no major breakdown during the monitoring period. No unforced error observed. No sampling procedure applied for monitoring of the data parameter and entire documents were checked by the assessment team to arrive at positive verification conclusions. The monitoring plan is followed at the project site. The monitoring meters were calibrated in line with the registered monitoring plan and there was no delay in calibration observed. VVB confirmed that data/ information used for determining GHG reductions and removals was sufficient in quantity and of appropriate quality. Calibration certificates of meters/ QA/QC procedure checked and found to be appropriate. Thus, assessment team concluded that the evidences are sufficient in quantity, and appropriate for the quality, to determine the GHG reductions and removals.

4.6 Non-Permanence Risk Analysis

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

5 VERIFICATION CONCLUSION

Applus+ Certification has been engaged by Adani Renewable Energy (RJ) Limited to perform the 3rd periodical verification of the “Renewable Solar Power Project by Adani”.

The management of Adani Renewable Energy (RJ) Limited 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 & MR/^{4/} and the applied methodology ACM0002 - Version 19/^{18/}.

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

- the project is operated as planned and described in the project document;
- the monitoring plan is as per the applied methodology;
- the monitoring process in Monitoring Report is as per the joint PD & MR /^{4/}.
- 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/^{7/} runs reliably and is calibrated appropriately;
- the monitoring system is in place and generates GHG Emission reduction/^{7/} data;
- the GHG emission reductions are calculated without material misstatements.
- A Reasonable Level of assurance was achieved as planned, during verification process.
- Project complies with the verification criteria for projects and their GHG emission reductions or removals set out in VCS program guideline version 4.1 and VCS Standard version 4.2.
- Project has been implemented in accordance with the project description and subsequently validated deviations
- Verification period: 01-January-2021 to 30-November-2021 (inclusive of both days)

Verified GHG Emission reduction/^{7/} and removals in the above verification period:

Year	Baseline emissions or removals (tCO ₂ e) ⁶	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)

⁶Rounddown values

01-January-2021 to 30-November- 2021	445,217	0	0	445,217
Total	445,217	0	0	445,217

The estimated emission reduction for the current monitoring period is 400,639 tCO₂e (437,825 tCO₂e / 365 days X 334 days), whereas actual emission reduction achieved by the PA is 445,217 tCO₂e which is 11.13% Higher than the estimated Emission reduction^{7/} the increase in emission reduction is due to variations in climatic conditions, grid availability and other parameters which are not in the control of PP. From the generation data it was observed that the PLF achieved during this monitoring period for all plant site are higher than estimated. As per the registered PDD, the Equity IRR without CDM VCS for the project activity is 8.89 % and the Benchmark Equity IRR is 14.18%. The PLF considered at the time of validation is 27.29% as per the DPR of the project activity. The average actual PLF for the current monitoring period from 01-January-2021 to 30-November-2021 is 29.59%. Upon using this PLF for the IRR calculations, the Equity IRR comes out to be 10.3% which is well below the benchmark. Thus, it is concluded that the project activity is still additional though 11.13% higher Emission reduction^{7/} achieved as higher PLF does not crosses the breaching point.

APPENDIX 1: DOCUMENTS REVIEWED DURING VERIFICATION

No.	Author	Title	References to the document	Provider
1.	Respective State Utility	Commissioning certificate issued by <i>Maharashtra State Electricity Distribution Company Limited</i>	Dated 21-August-2019	PP
2.	Applus	Contract of the project participant with the VVB	Contract document signed between PP and VVB	PP
3.	NA	The operational lifetime of the project activity from the manufacturer = (Technical specifications)	Manufacturer technical specifications	PP
4.	Verra	Registered joint PD & MR https://registry.verra.org/app/projectDetail/VCS/2043 Final joint Validation & verification report 2 nd verification report	Version 02, dated 23-December-2019 Version 01, dated 28-December -2019 Version 01, Dated 01-May-2021	PP
5.	NA	Calibration Certificates of all energy meters	NA	PP
6.	PP	MR version 01 (Initial) MR version 02 MR Version 03 MR Version 04 (Final)	02-February-2022 14-April-2022 11-May-2022 08-July-2022	PP
7.	PP	Emission reduction sheet version (Initial) Emission reduction sheet version 02 Emission reduction sheet version 03(Final)	02-February-2022 14-April-2022 11-May-2022	PP
8.	PP	O & M Agreement	-	PP
9.	PP	Power Purchase Agreement (PPA)	27-July-2019	PP
10.	VCS UNFCCC	Tools/ guidelines used in the project activity - Glossary of CDM terms version 07 - VCS standard Version 4.2 - VCS Program Guide 4.1 - VCS verification report template version 4.1	UNFCCC CDM/VCS web site	UNFCCC
11.	Respective state utility	Monthly statement- Regional Energy Account (REA) Statement & invoices for the complete monitoring period	-	PP
12.	PP	Declaration regarding no participation in other GHG program for the concerned monitoring period	11-January-2022	PP
13.	PP	Breakdown details for the monitoring period	-	PP
14.	PP	Employment records for plant persons	-	PP
15.	PP	Grievance Register maintained at site	-	PP

No.	Author	Title	References to the document	Provider
16.	UNFCCC	CDM validation and verification standard for project activities,	Version 03.0	UNFCCC
17.	PP	Plant Logbook sheet	-	PP
18.	UNFCCC	ACM0002: Grid-connected electricity generation from renewable sources	Version 19.0	UNFCCC
19.	PP	Remote audit records	15-February-2022	PP

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

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

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

Table 2. CL from this verification

CL ID	01	Section no.	4.1	Date : 21-April-2022
Description of CL				
As per registered Joint PD & MR (version 1, dated:13-Novemeber-2019, the installed capacity of the project is 250 MW, however, total capacity of the project mentioned in monitoring report is 200 MW. Further, technical specifications of modules are also not consistent with the Joint PD & MR. PP is requested to clarify the same.				
Project participant response				Date: 21-April-2022
The final validation documents are not visible on VCS project page, the same has been taken up with VERRA team, a copy of email shared with VVB along with the final VCS PDMR and FVR for ready reference. As per the final PDMR V02, the capacity is 200 MW. The Technical specifications have been made consistent as mentioned in the Commissioning Certificate issued by the State Utility and mentioned in the Deviations section of VCS MR V03 now submitted for assessment.				
Documentation provided by project participant				
Final VCS PDMR V01 dated 23-December-2019 and FVR V01 dated 28-December-2019				
DOE assessment				Date: 30-April-2022
The project participant has now submitted the revised project description version 02, dated 23-December-2019. The verification team has reviewed the same and confirms that the total installed				

capacity of the project is 200 MW. The same has been cross checked with commissioning certificate and found correct. Thus, CL is closed.

Table 3. CAR from this verification

CAR ID	01	Section no.	4.1	Date :22-March-2022
Description of CAR				
The breakdown details of the plants are missing in Appendix 2 of monitoring Report. Plant logbook sheet/breakdown are also not submitted by PP. Corrective action is sought.				
Project participant response				Date : 14-April-2022
The major breakdown details of the plant have been updated in Appendix 2 of the MR version 02 now submitted to the VVB along with the Breakdown Details of the plant covering the entire monitoring period for further assessment.				
Documentation provided by project participant				
MR version 02 Breakdown details				
DOE assessment				Date: 21- April-2022
PP has updated the major breakdown details of plant in Appendix 2 of revised monitoring report and also submitted the breakdown details sheet to assessment team covering current monitoring period. Assessment team has checked the break down log sheet and confirms that no major breakdown observed during the monitoring period. The project undergone continuous operation and only scheduled maintenance is observed as per the manufactures specification which is acceptable to the assessment team. CAR is closed.				

CAR ID	02	Section no.	4.1	Date : 22-March-2022
Description of CAR				
During the review of documents submitted by PP, assessment team observed that PP has not submitted supporting evidences such as Power Purchase agreements, Commissioning of Solar plants. PP is requested to submit above documents for verification.				
Project participant response				Date: 14-April-2022
The Power Purchase agreements and Commissioning Certificate of Solar plants is now submitted to the VVB along for further assessment.				
Documentation provided by project participant				
Power Purchase Agreement Commissioning Certificate				
DOE assessment				Date: 21-April-2022
PP has now submitted the following supporting evidences to assessment team: 1. Power purchase agreement issued by state electricity board of Maharashtra signed between PP and Maharashtra State Electricity Distribution Company Limited dated 27-July-2018. Hence OK.				

2. Commissioning Certificate of Solar plant issued by Maharashtra State Electricity Distribution Company Limited, dated 21-August-2019. However, same documents reflect only 200 MW commissioned on the project site. PP is requested to clarify the same. CAR open.	
Project participant response	Date: 21-April-2022
The final validation documents are not visible on VCS project page, the same has been taken up with VERRA team, a copy of email shared with VVB along with the final VCS PDMR and FVR for ready reference. As per the final PDMR V02, the capacity is 200 MW. Documents provided: Final VCS PDMR V01 dated 23-December-2019 and FVR V01 dated 28-December-2019	
Documentation provided by project participant	
Revised MR Revised project description	
DOE assessment	Date: 11-May-2022
The project participant has now submitted the revised project description version 02, dated 23-December-2019. The verification team has reviewed the same and confirms that the total installed capacity of the project is 200 MW. The same is consistent with the commissioning certificate. CAR closed.	

CAR ID	03	Section no.	4.1	Date : 22-March-2022
Description of CAR				
- Project Proponent has mentioned in Section 1.9 of the VCS MR that project is not participated with any other GHG program. PP requested to submit supporting document regarding the same - Project Proponent has mentioned in Section 1.11 under “SDG 8 Economic Growth” that “the Project Proponent aims to provide employment to local men and women with decent compensation. PP has targeted to employ 20 persons by the year 2025 and minimum 1 person per annum after 2025. PP is requested to submit documentary evidence for provided employment during current monitoring period.				
Project participant response				Date : 14-April-2022
- A declaration stating that there is no double accounting of the emission reduction and the project is not participated with any other GHG program is now submitted to the VVB for further assessment. - As suggested that PP has targeted to employ 20 persons by the year 2025 and minimum 1 person per annum after 2025. The PP has not employed any local manpower yet for the current monitoring period under verification. But their management is working out a deployment plan for executing the target taken for 2025 and beyond.				
Documentation provided by project participant				
Declaration				
DOE assessment				Date: 21-April-2022

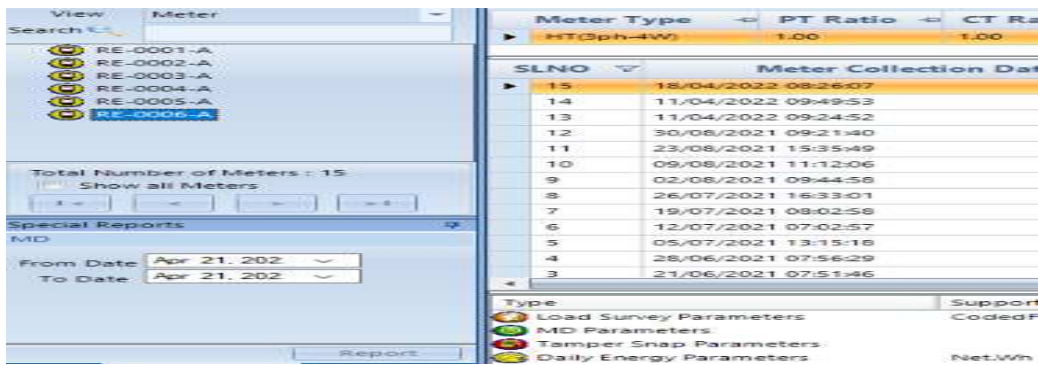
- PP has submitted VCS Undertaking dated 11-January-2022 regarding avoidance of double counting of emission reductions in the other GHG trading programmes and REC mechanism of India. Hence OK.
- As clarified by the project proponent, employment shall be provided 20 persons by the year 2025 and minimum 1 person per annum after 2025. The PP has not employed any local manpower yet for the current monitoring period under verification. However, their management is working out a deployment plan for executing the target taken for 2025 and beyond. Hence OK.

Thus, CAR is closed.

CAR ID	04	Section no.	4.2.2	Date: 22-March-2022
Description of CAR				
PP is requested to provide supporting documents of ongoing communication with local stakeholders as per requirement of Para 3.16.3 and 3.16.4 of the VCS standard V.4.0.				
Project participant response				Date : 14-April-2022
A copy of the grievance Register maintained at site has been submitted to the VVB for further assessment.				
Documentation provided by project participant				
Grievance Register				
DOE assessment				Date: 21-April-2022
PP has kept grievance registered at project site for ongoing communication with Local Stakeholder and also provided the copy of grievance registered to assessment team and the same is in line with the requirement of para 3.17.4 and 3.17.5 of the VCS standard V.4.2. Thus, CAR is closed				

CAR ID	05	Section no.	4.4	Date : 22-March-2022
Description of CAR				
During the review of documents submitted by PP, assessment team found that the following documents are missing; • Spreadsheet (Emission reduction calculation sheet) • Supporting evidence of electricity supplied to grid and Invoices for cross check Corrective action is sought.				
Project participant response				Date : 14-April-2022
• The Emission reduction calculation sheet version 01 is now submitted to the VVB for further assessment. • The Supporting evidence of electricity supplied to grid (Monthly REA statement) and Invoices for cross check have also been submitted.				
Documentation provided by project participant				
1. ER sheet V01 2. REA Statements 3. Power Sale Invoices				
DOE assessment				Date: 21-April-2022

PP has submitted the emission reduction calculation sheet for the current monitoring period and data is verified through REA (Regional Energy Account) statement issued by Northern Regional Power Committee (NRPC) and also crosschecked with the Invoices of power supplied by MSEDCL and found correct. **CAR is closed.**

CAR ID	06	Section no.	4.5	Date : 22-March-2022
Description of CAR				
During the review of documents submitted by PP, assessment team observed that PP has not submitted supporting of meters calibration. Corrective action is sought.				
Project participant response				Date : 14-April-2022
The Meter Calibration details have been included in Appendix #1 of the MR version 02 now submitted to the VVB along with Meter Calibration Reports for further assessment.				
Documentation provided by project participant				
MR version 02 Meter Calibration Report				
DOE assessment				Date: 21-April-2022
PP has applied deviation in monitoring equipment as described in Section 3.2.2 of revised MR and submitted the calibration supporting which are found consistent with calibration information mentioned in Appendix 1 of revised MR. However, calibration information of meters installed at the interconnection point (220 kV PGCIL Bhadla substation is not provided. Further, supporting not submitted. Moreover, Line diagram provided in section 4.3 of monitoring report is not in line with the monitoring plan. CAR is open.				
Project participant response				Date : 21-April-2022
The Meters installed at the interconnection point (220 kV PGCIL Bhadla substation have no purpose whatsoever with regard to Invoicing or Billing for Energy Accounting. Hence, it has been removed. A screenshot of the Meter data which is regularly fed to NRLDC by the site person (AMR readings) shows the following meters only whose readings are further used for Scheduling and Invoicing:-				
				

Metering Equipment installed at Sending end at the 33 kV Grid Substation)	
125 MW Main Meter:	RE-0001-A
125 MW Check Meter:	RE-0002-A
125 MW Standby Meter:	RE-0003-A
75 MW Main Meter:	RE-0004-A
75 MW Check Meter:	RE-0005-A
75 MW Standby Meter:	RE-0005-A
Documentation provided by project participant	
MR version 02	
Meter Calibration Report	
DOE assessment	Date: 30-April-2022
PP clarified that the Meters installed at the interconnection point (220 kV PGCIL Bhadla substation) have no purpose whatsoever with regard to Invoicing or Billing for Energy Accounting. A screenshot of the Meter data which is regularly fed to NRLDC by the site person (AMR readings) confirms the installed meters which have been used for monitoring. PP has requested deviation for in current monitoring period. Thus, acceptable to VVB.	
CAR closed.	

Table 4. FAR from this verification

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

APPENDIX 3: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS

Verification team member

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

Technical reviewer and approver of the verification and certification report

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

Short CVs of the Team:

- Mr. Jitendra Mohan Singh** has done Advanced MSc in Sustainable Energy Systems and Management from International Institute of Management, University of Flensburg, Germany and B.Tech. in Agricultural Engineering from Allahabad University, India. He has more than 20 years of working experience in different organizations like IARI, IIT Delhi, ICAR, IRADe, CAPART, SMEC and Perenia Carbon and M B Power (Madhya Pradesh) Ltd. in the area of Agriculture, Energy & Environment and Climate Change. He also worked on contract basis (adhoc) as a RIT expert in UNFCCC from 2010 to 2013. Currently, he is

empanelled with Applus+ Certification since 2020 and has been involved Verifications of Pas/PoAs as Lead Auditor and Technical Expert for Renewable and non-Renewable as well as Energy Demand.

2. **Mr. Denny Xue** has a Bachelor's Degree on Thermal Energy Engineering and Master's Degree on Environmental Engineering. He has more than 10 years of experience on CDM project development. Before he joined Applus+ LGAI, he has been worked for Shanghai Chuanji Investment and Management which is a CDM consultancy company as a project manager for CDM project development. He is working with Applus+ since 2011 carrying out Validation and verification for CDM/GS/VCS project under scope 1 and 13 as auditor, lead auditor, technical expert and technical reviewer

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
VVB	Validation and Verification Body
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
REA	Regional Energy Account
PP	Project Participant

APPENDIX 5: CALIBRATION DETAILS OF THE METERS

The calibration detail of meters used during the current monitoring period are as follows: and calibration date and as per the connectivity details given in the Commissioning Certificate issued by the state utility, Maharashtra State Electricity Distribution Company Limited (MSEDCL): -

Metering Equipment installed at Sending end at the 33 kV Grid Substation)

125 MW Main Meter: RE-0001-A

125 MW Check Meter: RE-0002-A

125 MW Standby Meter: RE-0003-A

75 MW Main Meter: RE-0004-A

75 MW Check Meter: RE-0005-A

75 MW Standby Meter: RE-0006-A

The above Metering Equipment installed at Sending end at the 33 kV Grid Substation) are used for data collection and scheduling. Also, in reference to the Power Purchase Agreement signed by PP with the State Utility, for the purpose of energy accounting the power producer shall install ABT compliant meter at the metering point which have been mentioned above.

The Calibration details of above meters is as below: -

S. No.	Meter Details	Serial No.	Make of Meter	Accuracy Class of Meter	Date of Calibration	Due date of calibration
1	MAIN	RE-0001-A	L&T	0.2s	03-June-2019	02-June-2024
2	CHECK	RE-0002-A	L&T	0.2s	03-June-2019	02-June-2024
3	STANDBY	RE-0003-A	L&T	0.2s	03-June-2019	02-June-2024
4	MAIN	RE-0004-A	L&T	0.2s	03-June-2019	02-June-2024
5	CHECK	RE-0005-A	L&T	0.2s	03-June-2019	02-June-2024
6	STANDBY	RE-0006-A	L&T	0.2s	03-June-2019	02-June-2024

APPENDIX 6: DECLARATION FOR NO DOUBLE COUNTING



Date: 11-January-2022

Undertaking Letter

This undertaking is in reference to the current monitoring period i.e. 01-January-2021 to 30-November-2021 of VCS Project activity titled ***“Renewable Solar Power Project by Adani”*** wherein Adani Renewable Energy (RJ) Limited, hereby declares following:-

1. Projects is never rejected by Other GHG Programs.
2. The project is not registered under any other Mechanism.
3. The project is hosted in India, which is a Non-annex country and there is no compliance with an emission trading program or to meet binding limits on GHG emissions for this project activity.
4. Project ownership and right of use as per the VCS compliance rest with Adani Renewable Energy (RJ) Limited.
5. Project activity does not result in creation of another form of environmental credit during the period for which VCUs are claimed.

Also it is to be noted that, Adani Renewable Energy (RJ) Limited would not use net GHG emission reductions by this project for compliance with emission trading program to meet binding limits on GHG emissions.

For Adani Renewable Energy (RJ) Limited


(Alpesh Gedia)
Authorized Signatory

