



BUNDLED WIND POWER PROJECT IN MADHYA PRADESH, GUJARAT AND KERLA BY D.J. MALPANI



Document Prepared By

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

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Summary:

Verification purpose: LGAI Technological Center S.A. (Applus+ Certification) (Hereafter referred as Applus+ Certification) has been appointed by “D. J. Malpani” to perform the 4th periodic verification of the “Bundled Wind Power Project in Madhya Pradesh, Gujarat and Kerala by D.J. Malpani” (VCS ID 1679). The main purpose of this verification activity is to have an independent third party for the assessment of the project design, monitoring report to ensure a thorough assessment of the proposed project activity against the applicable CDM and VCS requirements.

The project involves installation and operation of 60 MW (8 WTG of 1.5 MW & 24 WTG of 2 MW) wind power project in the state of Madhya Pradesh, Gujarat and Kerala. As per Joint PD and MR the proposed capacity of the project was 66 MW. However later the capacity is reduced to 60 MW and deviation for the same was approved during 2nd monitoring period. The wind power generated from the bundled project activity is fed into Indian grid.

Start date of the project activity is the 28-March-2016. The monitoring period for this VCS verification is 01-March-2020 to 31-December-2020 (including both days) and the project activity achieved 91,255 tCO₂e emission reductions during this monitoring period thereon displaced 94,538 MWh amount of electricity from the generation-mix of power plants connected to the Indian Grid, which is mainly dominated by thermal/fossil fuel-based power plant.

The scope of the verification is the independent and objective review of the Monitoring Report (MR). The MR is reviewed against the relevant criteria (see above) and decisions by the CDM Executive Board and VCS executive board, including the approved baseline and monitoring methodology. The verification was based on the guidance given in the CDM validation and verification standard for project activities, version 02.0, review against registered PD and Final Validation report, CDM Project Standard for project activities, version 02.0, CDM project cycle procedure for project activities, version 02.0 and VCS program guideline version 4.0 and VCS standard version 4.1.

A risk-based approach has been followed to perform this verification activity. In the course of verification, 08 Corrective Action request (CAR) and 02 Clarification Requests (CLs) were raised and successfully closed. No FAR was raised during this verification. The review of the Monitoring report and additional documents related to baseline and monitoring methodology; the subsequent background

investigation, follow-up interviews and PP have provided LGAI Technological Center S.A. (Applus+ Certification) with sufficient evidence to verify the fulfilment of the stated criteria of VCS.

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

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

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

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1 INTRODUCTION

1.1 Objective

LGAI Technological Center S.A. (Applus+ Certification) (Hereafter referred as Applus+ Certification) has been appointed by “D.J. Malpani” to perform verification of the “Bundled Wind Power Project in Madhya Pradesh, Gujarat and Kerala by D.J. Malpani” under VCS guideline version 4.0 and VCS standard version 4.1. The objective of this verification activity is to have an independent third party for the assessment of the project design, Monitoring Report and Final Verification report and to ensure a thorough assessment of the proposed project activity against the applicable CDM and VCS requirements. In particular;

- the project's baseline is assessed against “ACM0002 - Version 17.0”
- the project's monitoring plan is assessed against “ACM0002 - Version 17.0”
- the projects compliance with the requirements of Article 12 of the Kyoto Protocol, the CDM Modalities and Procedures as agreed in the Marrakech Accords under decision 3/CMP.1, the annexes to this decision, subsequent decisions and guidance made by COP/MOP & CDM Executive Board and other relevant rules, including the Host Country legislation and sustainability criteria along with VCS guideline version 4.0 and standard version 4.1
- CDM validation and verification standard for project activities, Version 02.0
- CDM Project Standard for project activities, version 02.0
- CDM project cycle procedure for project activities, version 02.0
- VCS program guideline v4.0
- VCS standard v4.1

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

1.2 Scope and Criteria

The scope is defined as an independent and objective review of the Monitoring report (MR) prepared as per the registered PD and registered approved methodology ACM0002 - Version 17. The MR is reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board and VCS guideline version 4.0 and VCS standard version 4.1, including the approved baseline and monitoring methodology ACM0002 - Version 17. The verification was based on the requirements in the CDM validation and verification standard for project activities, Version 02.0, CDM Project Standard for project activities, version 02.0, CDM project cycle procedure for project activities, version 02.0 and VCS guideline version 4.0 and VCS standard version 4.1.

The verification is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the Monitoring report. In line with Guidelines for Application of materiality in verifications, the verification team has conducted a complete verification of all the information presented in the monitoring report and data monitored as presented in the emission reduction calculation spread sheet. It follows the paper trail back to the raw data such as meter reading records and invoices. There are no material errors, overestimation of ER, omission or misstatement. Verification team conducted onsite visit and also equipment's, technical details and metering/monitoring arrangement verified through documents shared by PP. The verification team has reviewed all the documents like commissioning certificates, technical specification, O&M practices, JMR, invoices, training records, grievance registers etc.

1.3 Level of Assurance

Applus+ Certification has planned and performed the verification by obtaining evidence and other information and explanations that assessment team considers necessary to give reasonable assurance that reported estimated GHG emission reductions are fairly stated. All documentary evidences were checked, a onsite visit 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 17" and the VCS standard.

1.4 Summary Description of the Project

The project activity involves installation and operation of 60 MW (8 WTG of 1.5 MW & 24 WTG of 2 MW). The bundled project consists 5 wind projects and the details of the projects are given below:

Sr. No.	Project Type	Project Capacity (in MW)	Owner of Project	Project Location	State
1	Wind	4.5 MW	D. J. Malpani	Dhar Site, Dhar	Madhya Pradesh
2	Wind	7.5 MW	D. J. Malpani	Ghatiya Site, Ujjain	Madhya Pradesh
3	Wind	6 MW	D. J. Malpani	Sadla Site, Surendranagar	Gujarat
4	Wind	26 MW	D. J. Malpani	Savarkundala Site, Amreli	Gujarat
5	Wind	16 MW	D. J. Malpani	Kinfra Site, Palakkad	Kerala

The capacity of the project as per registered Joint PD and Monitoring Report is 66 MW but the capacity of the project has been downsized to 60 MW and deviation for the same

was approved during 2nd verification. 22 MW capacity wind project at Kinfara site, Kerala has been downsized to capacity of 16 MW.

The monitoring period this VCS verification covered from 01-March-2020 to 31-December-2020 (inclusive of both dates) and the project activity is achieved 91,255 tCO₂e emission reductions during this monitoring period.

Assessment team checked the Commission of WTG with the commissioning Certificates and found correct. The project is implemented as per the description in the registered Joint PD and Monitoring Report. No event observed during the current monitoring period which can alter or deviate from the methodology requirement.

2 VERIFICATIONPROCESS

2.1 Method and Criteria

Verification Process: The project assessment is based on the “CDM validation and verification standard for project activities, Version 02.0 and “VCS standard Version 04.1 and program guideline version 4.0” and is conducted using standard auditing techniques to assess the correctness of the information provided by the project participants. Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), and relevant host country experience for evaluating the VCS project activity are appointed.

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

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

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

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

Appointment of the assessment team

According to the sectoral scope / technical area and experience in the sectoral or national business environment, Applus+ 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
Dr. Atul Takarkhede	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 01 submitted by the PP was reviewed against the approved methodology, registered PD, final validation report and other relevant criteria to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources has been done. A complete list of all documents and evidence material reviewed is included in this report below in Appendix 1.

Follow-up interviews

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

Resolution of Clarification and Corrective Action Request

The objective of this phase of the Verification was to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified for Applus+ Certification positive conclusion on the Monitoring report. The Corrective Action

Requests and Clarification Requests raised by Applus+ Certification were resolved during communications between the Client and Applus+ Certification to guarantee the transparency of the verification process, the concerns raised and responses given are summarized below in the Appendix 2.

The final MR Version 02 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

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Siddhartha	Das	In-charge-MP	02-April-2021 to 05-April-2021	Project Implementation, JMR & invoicing procedure, calibration, grievance mechanism, Management practices, data storage, QA/QC	Dr. Atul Takarkhede
2.	Deepak	Parmar	In-charge-GJ			
3.	Thirumalai	Kumar	In-charge-Kerala			
4.	Bankar	Mr. Kailas	PP representative		Project Implementation, Management practices, Grievances etc.	

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
5.	Rao	Ms Anjali	EKI Energy Services Limited		GHG calculations, MR and ER preparation,	

2.4 Site Inspections

Duration of on-site inspection: 02-April-2021 to 05-April-2021					
No.	Activity performed on-site	Site location	Date	Team member	
1.	Assessment team checked the implementation of the project, Baseline emission, Emission reduction calculation, technical description of the project and Monitoring. Assessment team also checked that whether the monitoring plan as described in the VCS PD is actually practised onsite. Also assessment team checked any change in host country criteria which may affect the baseline of the project activity.	Anantapur district Andhra Pradesh. States, India	02-April-2021 to 05-April-2021	Dr. Atul Takarkhede	

2.5 Resolution of Findings

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

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

Areas of validation and verification findings	No. of CL	No. of CAR	No. of FAR
Project design document and Monitoring report	00	01	00
Description of project activity	01	03	00
Application of selected baseline and monitoring methodology and selected standardized baseline	00	00	00
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	01	02	00
Calibration details	00	01	00
Monitoring plan	00	00	00
No Net harm assessment	00	00	00
Local stakeholder consultation	00	01	00
Others (please specify)	00	00	00
Total	02	08	00

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

2.5.1 Forward Action Requests

This is 4th periodic verification of the project activity and no FAR was raised from validation and previous verification.

2.6 Eligibility for Validation Activities

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

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

Project activity has not participated under other GHG or REC program.

3.2 Methodology Deviations

This section is not applicable for present verification as no methodology deviation sought during this verification

3.3 Project Description Deviations

PP has applied Two Deviation during this monitoring period related to down size of total installed capacity and net electricity supplied to grid.

Deviation 1:

This deviation is related to total capacity of the project. At the time of registration, the total capacity of the project envisaged was 66 MW. The capacity of the project was downsized to 60 MW. The earlier, 22 MW capacity wind project at Kinfara site in Kerala by D. J. Malpani, Kerala has been downsized to capacity of 16 MW. This deviation is permanent in nature and already approved during the 2nd monitoring period.

Deviation 2:

In the registered Joint PD and Monitoring Report, “Quantity of net electricity generation supplied by the project (Wind) plant/unit to the grid in year” is calculated as the difference of the measured values of “export” and “import” of electricity through the dedicated SEB energy meter installed at the delivery point (i.e. the connected substation) i.e. Electricity Export to the grid – Electricity Import from the grid. For the Gujarat project the JMR/Share certificate issued by GETCO does not have split up of export and import and directly provides the net electricity supplied to the grid. Therefore, PP has applied deviation to use net electricity export to grid directly from the Certificate for Share of Electricity Generation for emission reductions calculation. Verification team checked the Certificate for Share of Electricity Generation and confirmed the same. This does not have any impact on emission reductions. Thus acceptable to VVB.

The deviation is appropriately described in the monitoring report. The deviation doesn't impact the scale, applicability of the methodology, baseline scenario, additionality of the project activity, monitoring & emission reductions and is in accordance with the VCS standard version 4.1. Thus accepted by the VVB.

3.4 Grouped Project

The project activity is not Grouped project hence, section not applicable.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

During the Onsite interviews with PP & plant in-charge and subsequent document verification; commissioning certificates, PPA, JMR and invoices, it was concluded that the project is implemented as per the requirement of the registered VCD PD and approved

monitoring plan. During the current monitoring period, it was observed that no unforeseen incident/event evolved which can impact the operation of the project activity which was verified from breakdown records. The project undergone continuous operation and only scheduled maintenance is observed as per the manufactures specification which is acceptable to the assessment team and evident from JMRs.

The project activity is installation of 60 MW wind power project consists 8 WTG of 1.5 MW & 24 WTG 2 MW. The project is promoted by D. J. Malpani. Ltd. The same was verified through commissioning certificates. WTG wise latitudes and longitudes are confirmed below:

S. No.	Project Owner	Machine ID	District	State	Latitude (N)	Longitude (E)
1	D. J. Malpani	RGP2- 09	Ujjain	Madhya Pradesh	23° 21' 25"	75° 47' 38"
2		RGP2- 08			23° 22' 04"	75° 48' 13"
3		RGP2- 18			23° 20' 16"	75° 49' 10"
4		RGP2- 03			23° 20' 31"	75° 48' 57"
5		RGP2- 07			23° 22' 16"	75° 47' 48"
6	D. J. Malpani	IWISL/2000/16-17/3826	Surendranagar	Gujarat	22° 41' 51.9634"	71° 11' 45.4457"
7		IWISL/2000/16-17/3829			22° 42' 09.1591"	71° 12' 20.8237"
8		IWISL/2000/16-17/3830			22° 41' 59.8731"	71° 12' 31.8505"
9	D. J. Malpani	IWISL/2000/16-17/4060	Amreli	Gujarat	21° 18' 27.5358"	71° 25' 05.4767"
10		IWISL/2000/16-17/4061			21° 18' 21.8501"	71° 25' 30.1157"
11		IWISL/2000/16-17/4062			21° 18' 29.9265"	71° 26' 02.8202"
12		IWISL/2000/16-17/4063			21° 18' 18.5448"	71° 26' 03.1529"
13		IWISL/2000/16-17/4064			21° 18' 10.5525"	71° 26' 09.6116"
14		IWISL/2000/16-17/4065			21° 18' 21.4798"	71° 30' 27.9626"
15		IWISL/2000/16-17/4066			21° 19' 48.1147"	71° 27' 17.9010"
16		IWISL/2000/16-17/4067			21° 19' 59.6034"	71° 27' 03.5558"

17		IWISL/2000/ 16- 17/40678			21° 20' 11.4744"	71° 27' 14.2307"
18		IWISL/2000/ 16-17/4350			21° 17' 09.9172"	71° 31' 36.7340"
19		IWISL/2000/ 16-17/4489			21° 18' 10.3896"	71° 26' 09.6792"
20		IWISL/2000/ 16-17/4490			21° 18' 18.4176"	71° 26' 03.2388"
21		IWISL/2000/ 16-17/4491			21° 18' 29.7756"	71° 26' 03.2064"
22		DJM 01			10° 47' 08.8350"	76° 47' 22.4161"
23		DJM 02			10° 47' 00.7304"	76° 47' 16.9701"
24		DJM 03			10° 46' 52.2401"	76° 47' 10.6991"
25	D. J. Malpani	DJM 05	Palakkad	Kerala	10° 46' 42.0601"	76° 47' 03.9574"
26		DJM 06			10° 46' 34.0199"	76° 46' 58.6108"
27		DJM 07			10° 46' 31.8877"	76° 47' 07.1889"
28		DJM 08			10° 46' 24.7089"	76° 47' 10.5038"
29		DJM 09			10° 46' 18.3974"	76° 47' 21.4268"
30	D. J. Malpani	ADD- 01			22° 37' 50"	75° 16' 55"
31		ADD- 06	Dhar	Madhya Pradesh	22° 37' 24"	75° 16' 29"
32		TIR- 11			22° 37' 11"	75° 16' 40"

Verification team confirmed from the registered Joint PD Monitoring Report and from previous verification reports that the location of the project activity including the coordinates is same as mentioned in the registered Joint VCS PD and Monitoring Report.

Assessment team checked the commissioning certificate and confirmed that the dates of Commission for the WTGs are correct. Assessment team also conform during interview with the PPs representatives that there is no change in project design and the project is implemented as per the description provided in the VCS PD. The details of project and commissioning dates of WTGs are provided below:

S. No.	Project Owner	Machine ID	Date of commissioning	District	State
1	D. J. Malpani	RGP2- 09	28-March-2016	Ujjain	Madhya Pradesh
2		RGP2- 08	29- March -2016		
3		RGP2- 18			
4		RGP2- 03			
5		RGP2- 07			
6	D. J. Malpani	IWISL/2000/16-17/3826	31- March -2017	Surendranagar	Gujarat
7		IWISL/2000/16-17/3829			
8		IWISL/2000/16-17/3830			
9	D. J. Malpani	IWISL/2000/16-17/4060	31- March -2017	Amreli	Gujarat
10		IWISL/2000/16-17/4061			
11		IWISL/2000/16-17/4062			
12		IWISL/2000/16-17/4063			
13		IWISL/2000/16-17/4064			
14		IWISL/2000/16-17/4065			
15		IWISL/2000/16-17/4066			
16		IWISL/2000/16-17/4067	31- March -2017		
17		IWISL/2000/16-17/40678	31- March -2017		
18		IWISL/2000/16-17/4350	31- March -2017		
19		IWISL/2000/16-17/4489			
20		IWISL/2000/16-17/4490			
21		IWISL/2000/16-17/4491			
22	D. J. Malpani	DJM 01	28- March -2017	Palakkad	Kerala

23		DJM 02			
24		DJM 03			
25		DJM 05			
26		DJM 06			
27		DJM 07			
28		DJM 08			
29		DJM 09			
30	D. J. Malpani	ADD- 01	31- March - 2016	Dhar	Madhya Pradesh
31		ADD- 06			
32		TIR- 11			

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

Assessment team also checked the technical details of the WTGs installed onsite from documents submitted by PP and previous verification reports. The same is cross checked from the photographs of the number plates, module capacity etc. submitted by PP & also cross checked from the technical details from Manufacturer.

Technical details of WTG

The WTG installed in the project is ReGen Powertech make 1.5 MW WTG & Inox Make 2 MW WTG.

The technical specification of the WTGs is as follows:

Technical details of Regen Powertech 1.5 MW (VENSYS 87, 1500 KW)

Particulars	Details
Make	ReGen Powertech
Rated power	1500 kW
Cut-in wind speed	3 m/s
Cut-out wind speed	22 m/s
Survival wind speed	52.5 m/s
Generator	Variable Speed Multi Pole Synchronous
Rotor Diameter	87 m
Swept area	5942 m ²
Speed Range	9 to 17.3 rpm
Hub Height	85 m
Design	Tubular, Four Sections
Foundation Type	Floating
Control of Output	Pitch Regulation
Speed Control	Variable, micro controller based
Low Voltage Ride Through (LVRT)	3 seconds
Primary Brake system	Aerodynamic
Pitch System	Electromechanical
Remote Monitoring	VPN
Wind Turbine type class	GL III B
Design Lifetime	25 years

Technical details of Inox 2.0 MW (WT 2000 DF/100)

Sr. No.	Particulars	Details
1.	Rated power	2 MW
2.	Cut-in wind speed	3 m/s
3.	Rated wind speed	11 m/s
4.	Cut-out wind speed	20 m/s
5.	Hub height	80m
6.	Diameter	100.3 m
7.	Swept area	7894 m ²
8.	Estimated design Life time	25 years

The assessment team confirmed that there is no proposed or actual change to the project design during this monitoring period. The project design as mentioned in the registered PD is implemented and thus the same is acceptable to the assessment team. All required monitoring equipment's and procedures as mentioned in the registered PD are available and implemented in an appropriate manner. There was no major breakdown or shutdowns during the monitoring period which might affect the applicability of methodology or might cause material errors in emission reductions.

The organisational role and responsibility as mentioned in the registered Joint PD and Monitoring Report is followed onsite. All the emergency preparedness as mentioned in the registered PD is followed onsite and no discrepancies were found regarding the same.

Meters are calibrated as per calibration frequency in registered Joint VCS PD and Monitoring Report. All the emergency preparedness as mentioned in the registered Joint VCS PD and Monitoring Report is followed onsite and no discrepancies were found regarding the same. Thus, completeness of the monitoring plan confirmed and there are no any material discrepancies between the actual monitoring system and the plan provided in the registered PD.

Assessment team confirms following during the interviews with PP and documents review:

1. Starting date of the operation of the project activity is 28-March-2016 which is the date of commissioning/commercial operation of the 1st WTG.
2. An undertaking letter dated 12-May-2021 has been submitted by PP for no double counting with any other GHG program. PP also has given a written declaration that project has not claimed other form of GHG credit for the concerned monitoring period. Assessment team also checked that the projects are not registered under the REC mechanism of India and the same can be cross-checked at <https://recregistryindia.nic.in>. PP has given a written declaration that the credit claimed under VCS for the current monitoring period is not claimed under any other GHG mechanism.
3. Assessment team confirms that this is the 4th monitoring under VCS and covers the activity from 01-March-2020 to 31-Decemeber-2020 (inclusive of both dates). The project activity adopts renewable crediting period of 10 years period and can be renewed for maximum 2 times. 26-March-2016 is the start date and 25-March-2026 will be end date of the crediting period.

The GHG credits from 01-March-2020 to 31-Decemeber-2020 will be claimed under VCS only. At any point of time during the crediting period, the project proponent will abide by the “No Double Counting”.

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

Organization name	D. J. Malpani
Contact person	Mr. Prafulla Khinvasara
Title	CEO-Renewable Energy Projects
Address	Malpani House, New Nagar Road, Tal- Sangamner, Dist - Ahmednagar, Maharashtra, India
Telephone	+91-976580098
Email	prafulla@malpani.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
Role in the Project	Project Consultant
Contact person	Ms. Anjali Rao

Title	Project Manager
Address	Office No 201, Plot No 48, Scheme 78, Vijay Nagar Part- II, Indore 452010, India
Telephone	+91 9109120940
Email	anjali@enkingint.org / registry@enkingint.org

5. The quantified emission reduction calculation for the monitoring period is correct and conservative. Assessment team also compared actual VER with the estimated VER¹ and found that the actual VER is 91,255 tCO₂e which is 6.20% lower than the estimated emission reductions 97,288 tCO₂e (116,046 tCO₂e/365 days x 306 days) during this monitoring period which is due to lower wind flow pattern and low PLF attained by the wind power plant during the current monitoring period.

SUSTAINABLE DEVELOPMENT:

Ministry of Environment & Forests, Government of India has stipulated following indicators for sustainable development in the interim approval guidelines for GHG projects.

Social well-being: The project activity has resulted in creating job opportunities for the local population on temporary and permanent basis. Manpower is required both during erection and operation of the renewable energy projects. This results in the improvement in living standards of the local community. The installation of the renewable energy projects also led to development of basic infrastructure like roads, communication with the nearby cities etc. which also improved in living standards of the local population.

Economic well-being: The project activity has created direct and indirect job opportunities to the local community during installation and operation of the renewable energy projects. The investment for the project activity has led to the improvement in the economic activity in the local area.

Technological well-being: The successful operation of project activity has led to promotion of wind power generation and would encourage other entrepreneurs to participate in similar projects.

Environmental well-being:

The project activity utilizes renewable energy for generating electricity which otherwise would have been generated through alternate fuel (most likely - fossil fuel) based power plants, contributing to reduction in specific emissions (emissions of pollutant/unit of energy generated) including GHG emissions. As renewable energy projects produce no end products in the form of solid waste (ash etc.), they address the problem of solid waste disposal encountered by most other sources of power. Being a renewable resource, to generate electricity contributes to resource conservation. Thus the project causes no negative impact on the surrounding environment.

¹ Calculated for installed capacity.

In view of the above, the PP has considered that the project activity profoundly contributes to the sustainable development.

4.2 Safeguards

4.2.1 No Net Harm

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

Further, wind power projects are not included in the Schedule I of the EIA notification S.O.1533 (E) dated 14th September 2006² and thus an EIA is not required. Ministry of Environment & forests vide their OM J-11013/41/2006 - IA II (I) dated 13th May 2011, has re-affirmed this and exempted wind power plants from EIA and Environmental Consent requirement.

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 2013³. 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 notification⁴ solar/wind project falls under White Category and are practically non-polluting.

4.2.2 Local Stakeholder Consultation

Local stakeholder consultation has been conducted at the time of project registration. For on-going stakeholder's communication, PP have maintained grievance register at the site office. All the stakeholders are happy with the implementation and operation of the project activity and no negative comments envisaged for the project activity. Complaint/suggestion/feedback register is maintained at site as a part of ongoing communication with stakeholders in line with clause 3.16.17 of VCS Standard, ver. 4.1 and appropriate actions taken time to time by PP.

Assessment team checked the grievance register provided by PP and found that local stakeholders can anytime lodge their grievances if any in the register over the operational life time of the project. During current monitoring period no grievance was received. Thus, assessment team is of the opinion that the ongoing stakeholder mechanism is adequate

² <http://envfor.nic.in/legis/eia/so1533.pdf>

³ <https://smartnet.niua.org/sites/default/files/resources/report-on-developmental-impacts-of-RE.pdf>

⁴ http://envfor.nic.in/sites/default/files/Latest_118_Final_Directions.pdf

and appropriate. However, CAR 05 was raised during the verification process and closed successfully. 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 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	CL 02, CAR 06 and CAR 07 were raised during the verification process and closed successfully. Please refer Appendix 2 of this report for the detail closure of the CAR and CL.
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:- $BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$ 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 CDM project activity in year y (MWh/year) $EF_{grid, CM, y}$ = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the "Tool to calculate the emission factor for an electricity system" (tCO₂/MWh) Ex-ante parameters: The baseline emission factors are taken ex-ante in line with the registered VCS PD as well as cross checked with section validation report and found correct. Combined margin CO₂ emission factor ($EF_{grid,CM,y}$) is equal to 0.9653 tCO₂/MWh. The calculation approach was in line with the registered Joint VCS PD and Monitoring Report. Values are as follows: $EF_{grid,OM,y} = 0.9843$ tCO₂/MWh $EF_{grid,BM,y} = 0.9083$ tCO₂/MWh $EF_{grid,CM,y} = 0.9653$ tCO₂/MWh

	Ex-post parameter: 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 supplied by the project plant/unit to the grid in year y in MWh. The value of the net electricity generation supplied to the grid is directly sourced from the monthly JMR/ Certificate for Share of Electricity Generation issued by state Utilities. The electricity generation supplied by the project activity is measured by dedicated SEB bidirectional tri vector main and check meter installed at substation (metering point). The details of electricity meters are provided in Appendix 5 of this report. Monthly meter readings are taken by representatives of SEB official and representatives of PP. The net electricity supplied to grid is calculated as the difference of the measured values of export and import of electricity. For the Gujarat project the JMR/Share certificate provided by GETCO does not have split up of export and import and directly provides the net electricity supplied to the grid. Hence, PP has applied deviation in monitoring of net electricity export calculation of net electricity exported to grid in line with the Certificate for Share of Electricity Generation. The detailed of deviation is described in Section 3.3. of this report. Reported values of this parameter have been verified with monthly joint metering report. Value of this parameter for the current monitoring period is verified as 94,538 MWh. The verification team has checked the entire monthly “JMRs/Certificate for Share of Electricity Generation” the net electricity generation supplied to the grid and cross checked the invoices raised by the PP to the state Utilities. All relevant monitoring parameters have been verified with regard to the appropriateness of the applied measurement/determination method, the correctness of the values applied for ER calculation, the accuracy, and applied QA/QC measures. Baseline emission factor is calculated as combined margin, consisting of a combination of operating margin (OM) and build margin (BM) factors. BEy baseline emissions, tCO₂e $BEy = 94,538 \text{ MWh} \times 0.9653 \text{ tCO}_2\text{e/MWh}$ $= 91,255 \text{ tCO}_2\text{e (round down values)}$ As per applied methodology ACM0002, version 17.0 and the registered Joint VCS PD and MR, project emission is considered zero as the project activity involved wind power generation. Leakage: As per applied methodology ACM0002, version 17.0 and VCS PD Leakage emissions are not considered for the project activity.
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	Hence, $ER_y = BE_y - PE_y - Ly$ $= 91,255 - 0 - 0 = 91,255 \text{ tCO}_2\text{e}$ (rounddown values) Verification team confirms that the monitoring has been carried out in accordance with the monitoring plan contained in the registered VCS PD. Assessment team confirmed that the GHG emission reductions and removals have been quantified correctly in line with the registered VCS PD.
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4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

Means of verification	The verification team checked the Calibration details of the monitoring meters with the calibration certificates.
Findings	CAR 08 was raised during the verification process and closed successfully. Please refer Appendix 2 of this report for the detail closure of the CAR.
Conclusion	The metering arrangement is dedicated SEBI Energy Meters tri-vector bi-directional energy meters of accuracy class 0.2s (main and check) at the 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 monthly generation reports. The details like make, Serial number, Calibration dates etc are provided in Appendix 5 of this report. 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. 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. Interviews during onsite visit with O&M personnel also confirms the same. The calculation of net electricity supplied to grid is under purview of state electricity board and PP does not have control on it. Calibration details of the monitoring meters checked with calibration certificates submitted by PP and found that calibration frequency of 5 years is complied. Thus, no delayed calibration is observed and thus the same is found appropriate. The break down log is checked and there is no major breakdown during the monitoring period. No unforced error observed. No sampling procedure applied for monitoring of the data parameter and entire documents were checked by the assessment team to arrive at positive

	verification conclusions. The monitoring plan is followed at the project site. The monitoring meters were calibrated in line with the registered monitoring plan and there was no delay in calibration observed. Thus, assessment team concluded that the evidences are sufficient in quantity, and appropriate for the quality, to determine the GHG reductions and removals.
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4.6 Non-Permanence Risk Analysis

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

5 VERIFICATION CONCLUSION

Applus+ Certification has been engaged by D.J. Malpani to perform the 4th periodical verification of the “Bundled Wind Power Project in Madhya Pradesh, Gujarat and Kerala by D.J. Malpani”.

The project participants are responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project’s monitoring plan in the registered Joint VCS PD & MR and the applied methodology ACM0002 - Version 17.0

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

- the project is operated as planned and described in the project document;
- the monitoring plan is as per the applied methodology;
- the monitoring process in Monitoring Report is as per the PD
- the development and maintenance of records and reporting procedures are in accordance with the monitoring plan;
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately;
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements.
- A Reasonable Level of assurance was achieved as planned, during verification process.
- Verification period: 01-March-2020 to 31-Decemeber-2020 (inclusive of both days)

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

Year	Baseline emissions or removals (tCO ₂ e) ⁵	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
01-March-2020 to 31-December-2020	91,255	0	0	91,255

⁵Rounddown values

Year	Baseline emissions or removals (tCO ₂ e) ⁵	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
Total	91,255	0	0	91,255

APPENDIX 1: DOCUMENTS REVIEWED OR REFERENCED (VERIFICATION)

No.	Author	Title	References to the document	Provider
1.	NA	Commissioning certificates of the WTGs:		PP
2.	NA	Contract of the project participant with the DOE	Contract document signed between PP and DOE	PP
3.	NA	The operational lifetime of the project activity from the manufacturer = (Technical specifications)	Manufacturer technical specifications	PP
4.	NA	Registered PD /Issuance documents https://registry.terra.org/app/projectDetail/VCS/1679	NA	PP
5.	NA	Calibration Certificates of energy meters	NA	PP
6.	NA	MR version 01 MR version 02	22-February-2021 24-May-2021	PP
7.	NA	Emission reduction sheet version 01 Emission reduction sheet version 02	22-February-2021 24-May-2021	PP
8.	NA	O & M Agreement	-	PP
9.	NA	Power Purchase Agreement (PPA)	-	PP
10.	NA	Tools/ guidelines used in the project activity - Glossary of CDM terms version 07 - VCS standard Version 4.1 - VCS Program Guide 4.0 - VCS verification report template version 4.0	UNFCCC CDM/VCS web site	UNFCCC
11.	NA	Monthly Certificate for Share of Electricity Generation/JMR & invoices for the complete monitoring period	-	PP
12.	NA	Declaration regarding no participation in other GHG program for the concerned monitoring period	22-May-2021	PP
13.	NA	Breakdown details for the monitoring period	-	PP
14.	NA	Employment records for plant persons	-	PP
15.	NA	Grievance Register maintained at site	-	PP
16.		CDM validation and verification standard for project activities, Version 02.0	-	UNFCCC
17.		Joint Validation and Verification Report	Version 02 dated 19-February-2018	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.	4.4	Date: 05-April-2021
Description of CL				
In Section 4.2, it is mentioned that the net electricity generated and supplied by the project (Wind) plant/unit to the grid = Electricity Export to the grid – Electricity Import from the grid. However, it is observed that only electricity export details are considered for emission reduction calculation for Gujarat sites, electricity imports are not deducted from export. PP requested to clarify the same.				
Project participant response				Date: 24-May-2021
PP have only one parameter data available i.e. data of net electricity supplied to grid through share certificate issued by state electricity board. That's why only single parameter is considered for Gujarat site. A deviation is requested during the current monitoring period for the same.				
Documentation provided by project participant				
VCS MR V02				
DOE assessment				Date: 02-June-2021

The Certificate for Share of Electricity generated by the wind power plants issued by the Gujarat Electricity Transmission Corporation Limited contains the net electricity export to grid after deduction of import of electricity for the Gujarat site. PP has sourced net electricity export data from the Certificate for the share of electricity. Hence, accepted by VVB. Further, PP has also applied deviation for the same in monitoring plan for Gujarat site.

CL Closed.

CL ID	02	Section no.	4.1	Date: 05-April-2021
Description of CL				
In Registered JOINT VCS PD & Monitoring Report, the total installed capacity of the project activity was 66 MW and deviation was approved for downsized to 60 MW. However, PP has not mentioned anywhere in monitoring Report. Requested to clarify the same.				
Project participant response				Date: 24-May-2021
The details regarding downsizing of project capacity are now updated in section 1.1 of the MR as well as in the "Project description deviations" section. The deviation is already approved during the second monitoring period.				
Documentation provided by project participant				
VCS MR V02				
DOE assessment				Date: 02-June-2021
PP has now updated the Section 1.1 of revised MR. CL closed.				

Table 3. CAR from this verification

CAR ID	01	Section no.	Cover page	Date: 05/04/2021
Description of CAR				
Monitoring period mentioned on cover page of monitoring Report is not inline with the DOE contract.				
Further, Date format throughout MR not found inline with VCS guidelines to complete VCS MR.				
Corrective action is sought.				
Project participant response				Date: 24/05/2021
The observed inconsistency has been rectified in this submission.				
Documentation provided by project participant				
VCS MR V02				

DOE assessment	Date: 02-June02021
PP has corrected the monitoring period on cover page of MR and also corrected Date format throughout MR. CAR closed.	

CAR ID	02	Section no.	4.1	Date: 05-April-2021
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Description of CAR

During the review of documents submitted by PP, Verification team found that the following supporting evidences documents are missing;

1. Power Purchase Agreement of all projects
2. O & M Agreement
3. Commissioning Certificate of WTGs
4. Manufactures technical specifications of WTGS

PP is requested to submit above documents for verification

Project participant response	Date: 24-May-2021
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The requested documents are now provided.

Documentation provided by project participant

Power Purchase Agreement of all projects, O & M Agreement, Commissioning Certificate of WTGs, Manufactures technical specifications of WTGS

DOE assessment	Date: 02-June-2021
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PP has submitted the following supporting evidences to verification team:

1. Copy of PPAs signed with the Gujarat Urja Vikash Nigam Limited for Gujarat sites and with MP Power Management Company Limited for Madhya Pradesh sites.
2. Copy of Operation and Management of Wind power plant with INOX Wind Infrastructure Services Limited for Gujarat Sites and with M/s. ReGen infrastructure & Services Private Limited for Madhya Pradesh sites.
3. Copy of commissioning Certificate. Verification team checked commissioning dates of WTGs with commissioning certificates and found correct.
4. Manufactures technical specifications of WTGs. The same is checked with registered VCS PD and found consistent.

CAR closed.

CAR ID	03	Section no.	4.1	Date: 05-April-2021
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Description of CAR

In Section 1.9, PP has mentioned that “Project has neither been registered nor seeking registration under any other GHG project is seeking registration only in VCS program”. PP requested to submit declaration regarding avoidance of double counting of emission reductions in the other GHG trading programmes	
Project participant response	Date: 24-May-2021
Declaration for no double counting is provided by PP and the same is submitted.	
Documentation provided by project participant	
No double counting declaration.	
DOE assessment	Date: 02-June-2021
PP has now submitted the VCS undertaking dated 12-May-2021 regarding avoidance of double counting of emission reductions in the other GHG trading programmes and REC mechanism of India. Thus CAR closed.	

CAR ID	04	Section no.	4.1	Date: 05-April-2021
Description of CAR				
The breakdown details of WTGs are not provided in monitoring report. Further, PP requested to submit plant log book/ break down details.				
Corrective action is sought.				
Project participant response				Date: 24-May-2021
Breakdown details are updated in the revised MR and supporting for the same are provided.				
Documentation provided by project participant				
Breakdown details excel sheet, VCS MR V02				
DOE assessment				Date: 02-June-2021
Break Down submitted by PP and also included break down in monitoring report in Appendix II of revised MR. Verification team confirms that no major breakdown was found. Scheduled & preventive maintenance were carried out as per manufacturer specification for the power plant. No unforeseen activity observed during the present verification that can alter the applicability or additionality of the applied methodology. Thus CAR closed.				

CAR ID	05	Section no.	4.1	Date: 05-April-2021
Description of CAR				
PP is requested to provide supporting documents of local stakeholders including mechanism for ongoing communication with Local Stakeholder as per requirement of Para 3.16.3 and 3.16.4 of the VCS standard V.4.0.				

Corrective action is sought.	
Project participant response	Date: 24-May-2021
Grievance register is provided as supporting.	
Documentation provided by project participant	
Grievance register.	
DOE assessment	Date: 02-June-2021
PP has kept grievance registered at project site for ongoing communication with Local Stakeholder and also provided the copy of grievance registered to assessment and the same is in line with the requirement para 3.16.3 and 3.16.4 of the VCS standard V.4.0. CAR closed.	

CAR ID	06	Section no.	4.4	Date: 05-April-2021
Description of CAR				
PP has submitted the monthly JMRs and Invoices to VVB. Verification team has checked the electricity export and Import from the monthly JMRs and cross checked and found that values from Invoice for the month of March 2020 is missing and electricity import for the month of April 2020 for 4.5 MW is not inline with JMR submitted. Further, notation of Data/parameter in Section 4.2 is not consistent with the Joint VCS PD & MR. Corrective action is sought.				
Project participant response				Date: 24-May-2021
The inconsistency observed in the April-2020 value is rectified and the missing invoices for March-2020 is also provided. Data/parameter notation mentioned was a typo-error and the same is rectified in this submission.				
Documentation provided by project participant				
ER excel sheet, Invoice for March-2020 and VCS MR V02				
DOE assessment				Date: 02-June-2021
PP has rectified the inconsistency of data in ER sheet for the month of April 2020 for 4.5 MW plant and also submitted the missing invoices. Verification team checked the net electricity export to grid with JMRs and cross checked with the invoices and found correct. Further, PP has also corrected notation of Data/parameter in Section 4.2 of revised MR. CAR closed.				

CAR ID	07	Section no.	4.4	Date: 05-April-2021
Description of CAR				
In Section, 5.4 of monitoring Report, PP has calculated total estimated emission reduction during the current monitoring period 97,288 tCO₂e based on Annual Estimated ER calculation (365 days) of 116,046 tCO₂e. However, calculation details how it was estimated is not provide in emission reductions sheet considering downsized of the project activity. Corrective action is sought.				
Project participant response				Date: 24-May-2021
The estimated total estimated emission reduction during the current monitoring period 97,288 tCO₂e are based on Annual Estimated ER calculation (365 days) of 116,046 tCO₂e which are for the downsize capacity of 60 MW. The calculation are provided in the emission reduction sheets				
Documentation provided by project participant				
Emission reduction excel sheet.				
DOE assessment				Date: 02-June-2021
PP has now provided the total estimated emission reductions during this monitoring period based on down size capacity in ER sheet and also in revised MR. The estimated total estimated emission reduction during the current monitoring period 97,288 tCO₂e are based on Annual Estimated ER calculation (365 days) of 116,046 tCO₂e which are for the downsize capacity of 60 MW. Thus CAR closed.				

Accuracy of GHG Emission Reduction and Removal Calculations

CAR ID	06	Section no.	4.4	Date: 05-April-2021
Description of CAR				
PP has submitted the monthly JMRs and Invoices to VVB. Verification team has checked the electricity export and Import from the monthly JMRs and cross checked and found that values from Invoice for the month of March 2020 is missing and electricity import for the month of April 2020 for 4.5 MW is not inline with JMR submitted. Further, notation of Data/parameter in Section 4.2 is not consistent with the Joint VCS PD & MR. Corrective action is sought.				
Project participant response				Date: 24-May-2021

The inconsistency observed in the April-2020 value is rectified and the missing invoices for March-2020 is also provided. Data/parameter notation mentioned was a typo-error and the same is rectified in this submission.	
Documentation provided by project participant	
ER excel sheet, Invoice for March-2020 and VCS MR V02	
DOE assessment	Date: 02-June-2021
PP has rectified the inconsistency of data in ER sheet for the month of April 2020 for 4.5 MW plant and also submitted the missing invoices. Verification team checked the net electricity export to grid with JMRs and cross checked with the invoices and found correct. Further, PP has also corrected notation of Data/parameter in Section 4.2 of revised MR. CAR closed.	

CAR ID	07	Section no.	4.4	Date: 05-April-2021
Description of CAR				
In Section, 5.4 of monitoring Report, PP has calculated total estimated emission reduction during the current monitoring period 97,288 tCO₂e based on Annual Estimated ER calculation (365 days) of 116,046 tCO₂e. However, calculation details how it was estimated is not provide in emission reductions sheet considering downsized of the project activity. Corrective action is sought.				
Project participant response				Date: 24-May-2021
The estimated total estimated emission reduction during the current monitoring period 97,288 tCO₂e are based on Annual Estimated ER calculation (365 days) of 116,046 tCO₂e which are for the downsize capacity of 60 MW. The calculation are provided in the emission reduction sheets				
Documentation provided by project participant				
Emission reduction excel sheet.				
DOE assessment				Date: 02-June-2021
PP has now provided the total estimated emission reductions during this monitoring period based on down size capacity in ER sheet and also in revised MR. The estimated total estimated emission reduction during the current monitoring period 97,288 tCO₂e are based on Annual Estimated ER calculation (365 days) of 116,046 tCO₂e which are for the downsize capacity of 60 MW. Thus CAR closed.				

Quality of Evidence to Determine GHG Emission Reductions and Removals

CAR ID	08	Section no.	4.5	Date: 05-April-2021
Description of CAR				
Calibration certificate of check meter Sr.No. XD500609 and Y0056944 installed at Ghatiya site (Madhya Pradesh) is not provide. PP requested to submit the same.				
Project participant response				Date: 24-May-2021
Calibration certificates having meter Sr.No. XD500609 and Y0056944 is now being provided.				
Documentation provided by project participant				
Calibration certificates				
DOE assessment				Date: 02-June-2021
PP has submitted the pending calibration certificate. Verification team checked the calibration certificates submitted by PP and found that all meters are calibrated as per calibration frequency mentioned Joint VCS PD & MR. Calibration details are provided in Appendix I of revised MR. Thus CAR is closed.				

Table 4. FAR from this verification

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

APPENDIX 3: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS

Verification team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk review	On-site inspection	Interview(s)	Verification findings
1.	Lead Auditor/Technical Expert	OR	TAKARKHEDE	ATUL	TQC-Outsourced entity	Yes	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) / Technical Expert (TE)	EI	Xue	Denny	Applus+ Certification
2.	Approver	IR	Calle de Miguel	Agustin	Applus+ Certification

Short CVs of the Team:

- Dr. Atul Takarkhede is Ph.D. (Environmental Sciences) from Institute of Science, RTM Nagpur University, Nagpur, and he has already published different technical papers related to environmental sciences. He counts with more than 11 years of experience in field of Environmental Auditing, consulting and accreditation. He is an expert in ISO 9001-14001, CO2/GHG Reporting, Carbon Foot Print, Energy, Water and Waste Management reporting for organizations' environmental performance. His professional portfolio is mainly related with carrying out EIA, conducting QA/QC of EIA Reports; conducting environmental/water audits; NABET requirements appliance, functional area expert in Water Pollution & Solid & Hazardous Waste management among others. Furthermore, he counts with solid experience on CDM-VCS-GS consultancy and auditing. Currently he is associated with True Quality Certifications Private Limited and empanelled with Applus+ Certification to carry out GHG audits in the aforementioned schemes.
- Mr. Denny Xue (Master's Degree in Environmental Engineering, Bachelor's Degree in Thermal Engineering) is an Auditor appointed by Applus+ LGAI for the GHG project

assessment, auditing and technical review. He has more than 6 years of work experience in CDM/GS4GG/VCS project assessment and technical review with Applus+. Before he joined Applus+ LGAI, he has been working for Shanghai Chuanji Investment and Management which is a CDM consultancy company as a project manager for CDM project development.

APPENDIX 4: ABBREVIATIONS

Abbreviations	Full texts
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction(s)
CEA	Central Electricity Authority
CL	Clarification request
CM	Combined Margin
CMS	Central Monitoring system
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EF	Emission Factor
EIA	Environmental Impact Assessment
ER	Emission Reductions
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GWP	Global Warming potential
PP	Project Participant

APPENDIX 5: CALIBRATION DETAILS OF THE METERS

The Main and Check Meter details for Dhar Site, Madhya Pradesh:

Meter Details for WTG ID: TIR- 11			
Main Meter		Check Meter	
Make	Secure	Make	Secure
Meter Sl. No	XD500605	Meter Sl. No	XD500606
Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Frequency	Once in 5 years		
Calibration Date	19-March-2016	Calibration Date	21-March-2016
Due Date of Calibration	18-March-2021	Due Date of Calibration	20-March-2021

Meter Details for WTG ID: ADD- 01 & ADD- 06			
Main Meter		Check Meter	
Make	Secure	Make	Secure
Meter Sl. No	XD500602	Meter Sl. No	XD500603
Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Frequency	Once in 5 years		
Calibration Date	21-March-2016	Calibration Date	19-March-2016
Due Date of Calibration	20-March-2021	Due Date of Calibration	18-March-2021

The Main and Check Meter details for Ghatiya Site, Madhya Pradesh:

Meter Details for WTG ID: RGP2- 08 & RGP2- 09 at Feeder-1			
Main Meter		Check Meter	
Make	Secure	Make	Secure
Meter Sl. No	XD500608	Meter Sl. No	XD500609
Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Frequency	Once in 5 years		
Calibration Date	24-March-2016	Calibration Date	24-March-2016
Due Date of Calibration	23-March-2021	Due Date of Calibration	23-March-2021
Meter Details for WTG ID: RGP2- 18, RGP2- 03 & RGP2- 07 at Feeder-2			
Main Meter		Check Meter	
Make	Secure	Make	Secure
Meter Sl. No	Y0056943	Meter Sl. No	Y0056944
Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Frequency	Once in 5 years		
Calibration Date	24-March-2016	Calibration Date	24-March-2016

Due Date of Calibration	23-March-2021	Due Date of Calibration	23-March-2021
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The Main and Check Meter details for Gujarat sites

Meter-1		Meter-2	
Main Meter		Check Meter	
Make	Secure	Make	Secure
Meter Sl. No	GJ 3710 A	Meter Sl. No	GJ 3711 A
Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Frequency	Once in 5 years		
Calibration Date	30-Janaury-2017	Calibration Date	30-Janaury-2017
Due Date of Calibration	29-Janaury-2022	Due Date of Calibration	29-Janaury-2022

The Main and Check Meter details for Kinfara site, Kerala

Meter Details for Feeder- 1			
Main Meter		Check Meter	
Make	L & T	Make	L & T
Meter Sl. No	16088079	Meter Sl. No	16088085
Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Frequency	Once in 5 years		
Calibration Date	25-March-2017	Calibration Date	25-March-2017
Due Date of Calibration	24-March-2022	Due Date of Calibration	24-March-2022
Meter Details for Feeder- 2			
Main Meter		Check Meter	
Make	L & T	Make	L & T
Meter Sl. No	16088074	Meter Sl. No	16088092
Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Frequency	Once in 5 years		
Calibration Date	27-March-2017	Calibration Date	27-March-2017
Due Date of Calibration	26-March-2022	Due Date of Calibration	26-March-2022