

BUNDLED WIND POWER PROJECT IN RAJASTHAN BY ORANGE RENEWABLE POWER PRIVATE LIMITED



Document Prepared By (SUKANTA DAS- LEAD AUDITOR/ TECHNICAL EXPERT)

LGAI Technological Center S.A.

Ctra. Acceso a la facultad de Medicina, s/n, Campus UAB

E – 08193 Bellaterra (Barcelona) – Spain

Tel: +34 935 672 008

Fax: +34 935 672 001

www.appluscertification.com

Project Title	Bundled Wind Power Project in Rajasthan by Orange Renewable Power Private Limited
Version	03
Report ID	Internal project is: 2318

Report Title	Bundled Wind Power Project in Rajasthan by Orange Renewable Power Private Limited
Client	Orange Renewable Power Private Limited (ORPPL)
Pages	35
Date of Issue	11/05/2018
Prepared By	LGAI Technological Center S.A. (Applus+ Certification) Ctra. Acceso a la facultad de Medicina, s/n, Campus UAB

Contact	E – 08193 Bellaterra (Barcelona) – Spain
	Tel.:+34 935 672 008
	Fax.+34 935 672 001
	www.appluscertification.com
Approved By	Tel.:+34 935 672 008
	Fax.+34 935 672 001
	www.appluscertification.com
Work Carried Out By	Juan Sendin Caballero, BU Managing Director (Applus+ Certification)
	Mr. Sukanta Das-Lead Auditor/Technical expert

Summary:

Verification purpose: The main purpose of this project activity is to generate clean form of electricity through renewable energy sources. Orange Renewable Power Private Limited is the promoters of the proposed project activity. The project activity is a 59.4 MW (39.9MW in Bhesada & 19.5 MW in Dalot) bundled wind power project consisting of 32 Wind Turbine Generators (WTGs). The combined capacity of the project activity is 59.4 MW. The electricity generated from the WTGs will be sold to state electricity board. The project achieved greenhouse gases (GHG's) estimated to be 90,107 tCO₂e for the monitoring period, thereon displacing 922,72MWh/year amount of electricity from the generation-mix of power plants connected to the NEWNE regional grid, which is mainly dominated by thermal/fossil fuel based power plant.

The Project activity is a new facility (Greenfield) and it plans to utilize wind energy to generate electricity and supply it to distribution licensees which is a part of the NEWNE (Northern, Eastern, Western and North-Eastern) grid of India. Start date for this project is 31/03/2013. This is the day on which all the WTG was commissioned under the Project activity which is as per the registered PD. (Project ID: 1465: http://www.vcsprojectdatabase.org/#/project_details/1465)

A risk based approach has been followed to perform this verification activity. In the course of verification, 07 Corrective Action requests (CAR), 00 Clarification Requests (CLs) and 00 Forward action requests (FARs) were raised and successfully closed. The review of the Monitoring report and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and PP have provided DOE with sufficient evidence to verify the fulfilment of the stated criteria of VCS.

Table of Contents

CONTENTS

Table of Contents	3
1 Introduction	5
1.1 Objective	5
1.2 Scope and Criteria	5
1.3 Level of Assurance.....	6
1.4 Summary Description of the Project	6
2 Verification Process	9
2.1 Method and Criteria.....	9
2.2 Document Review	12
2.3 Interviews	12
2.4 Site Inspections	13
2.5 Resolution of Findings.....	13
2.5.1 Forward Action Requests	14
2.6 Eligibility for Validation Activities	14
3 Validation Findings.....	14
3.1 Participation under Other GHG Programs	14
3.2 Methodology Deviations	14
3.3 Project Description Deviations	14
3.4 Grouped Project	15
4 Verification Findings.....	15
4.1 Project Implementation Status	15
4.2 Accuracy of GHG Emission Reduction and Removal Calculations	18

4.3	Quality of Evidence to Determine GHG Emission Reductions and Removals	20
4.4	Non-Permanence Risk Analysis.....	21
5	safeguards	21
5.1	No Net Harm	21
5.2	Local Stakeholder Consultation	22
6	Verification conclusion	22
APPENDIX 1: Documents reviewed or referenced (Verificaton)		24
APPENDIX 2:		26
Clarification requests, corrective action requests and Forward action requests (CAR/CL/FAR)		26
APPENDIX 3: Competence of team members and technical reviewers		31
APPENDIX 4: Abbreviations		32
Appendix 5: Calibration details of the meters		34

1 INTRODUCTION

1.1 Objective

LGAI Technological Center S.A. (Applus+ Certification) (Hereafter referred as Applus+ Certification) has been appointed by “Orange Renewable Power Private Limited (ORPPL)” to perform the 4th periodic verification of the “Bundled Wind Power Project in Rajasthan by Orange Renewable Power Private Limited” under VCS standard and guideline version 3.7. The objective of this verification activity is to have an independent third party for the assessment of the project design, Monitoring report and Final 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 16”
- the project's monitoring plan is assessed against “ACM0002 v16”
- the projects compliance with, the requirements of Article 12 of the Kyoto Protocol, the CDM Modalities and Procedures as agreed in the Marrakech Accords under decision 3/CMP.1, the annexes to this decision, subsequent decisions and guidance made by COP/MOP & CDM Executive Board and other relevant rules, including the Host Country legislation and sustainability criteria along with VCS guideline and standard version 3.6
- CDM Validation and Verification Standard version 01 for the project activity
- CDM Project Standard version 01 for the project activity
- CDM Project Cycle Procedure version 01 for the project activity
- VCS standard v3.7
- VCS program guideline v3.7

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

1.2 Scope and Criteria

The scope of the verification is the independent and objective review of the Monitoring report (MR). The MR is reviewed against the relevant criteria (see 1.1) and decisions by the CDM Executive Board and VCS executive board, including the approved baseline and monitoring methodology. The verification was based on the guidance given in the CDM Validation and Verification Standard version 01 for the project activity, review against registered PD and Final Validation report, CDM Project Standard version 01 for the project activity, CDM Project Cycle Procedure version 01 for the project activity and VCS program guideline and standard version 3.7.

The assessment team has employed a risk based approach to assess the completeness and accuracy of the claims and conservativeness of the assumptions in the MR. The main focus of the assessment team is to identify the significant risks for the project implementation and the generation of VERs. The

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

1.3 Level of Assurance

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

1.4 Summary Description of the Project

The project activity is a 59.4 MW (39.9MW in Bhesada & 19.5 MW in Dalot) bundled wind power project consisting of 32 Wind Turbine Generators (WTGs). The project is promoted by Orange Renewable Power Private Limited & Orange Jaisalmer Wind Energy Private Limited of which the "Orange Renewable Power Private Limited" is the representative of promoter of this bundled project. The purpose of the project activity is to generate clean electricity with utilization of wind energy.

The first project in the current bundle project is a 39.9 MW Wind power project near village Bhesada, close to the city of Jaisalmer in state of Rajasthan, hereafter call "Project 1". It is developed by "Orange Jaisalmer Wind Energy Private Limited" (OJWEPL). It consists of 19 machines of 2.1 MW class Suzlon S88 make.

The other project in the bundle is 19.5 MW wind Power Project located near village Dalot, close to the city of Pratapgarh in state of Rajasthan, here after called "Project 2". It is developed by "Orange Renewable Power Private Limited" (ORPPL). It consists of 13 machines of 1.5 MW class Re-Gen V82 make.

There was no activity at the site prior to implementation of the project activity (Greenfield). The electricity generated by the project is exported to the NEWNE electricity grid. The project activity will therefore displace an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid. Since wind power is Greenhouse Gas (GHG) emissions free, the power generated will prevent the anthropogenic gas emissions generated by fossil fuel based thermal power stations comprising coal, diesel, furnace oil and gas.

All the WTGs in the project activity were commissioned on 31/03/2013 and have been operational since then. The details of the projects and the state of installation are mentioned in the table:-

Project Site's Name	Capacity	Technology	State	Connection with Grid	Use of Electricity
Site 1 – Bhesada	19x2.1 39.9MW	Suzlon S88	Rajasthan	NEWNE	Sale to Grid
Site 2 – Dolat	13x1.5	Re-Gen V82	Rajasthan	NEWNE	Sale to Grid

	19.5 MW				
--	---------	--	--	--	--

Assessment team confirms following during the verification site visit:

1. Start date of the project activity is 31/03/2013 as mentioned in the registered VCS PD
2. An undertaking letter 11/04/2018 has been submitted by PP for double counting with any other GHG program. PP also has given a written declaration that project has not claimed other form of GHG credit for the concerned monitoring period. Assessment team also checked that the projects are not registered under the REC mechanism of India and the same can be cross-checked at <https://recregistryindia.nic.in>.
3. The project activity has opted for 10 years crediting period which can be renewed for maximum twice. The current monitoring falls under the 1st crediting period which is from 31/03/2013 to 30/03/2022. The project activity started generating emission reduction from 31/03/2013.
4. Project location is confirmed by the assessment team during the site visit. Assessment team also checked with the GPS meter regarding the latitude and longitude of the project site and confirm that the details as mentioned in the registered PDD is correct. The detail is as below:

“Project 1”: Geo-coordinates of 39.9 MW Wind power project in Jaisalmer

S. No	WTG No	PSS	Village	Taluk	District	Latitude	Longitude
1	RSA204	SEL 194	Luna Kala	Pokaran	Jaisalmer	26.64770	71.55631
2	RSA231	SEL 195	Luna Kala	Pokaran	Jaisalmer	26.65686	71.56304
3	RSA271	SEL 195	Luna Kala	Pokaran	Jaisalmer	26.65871	71.57321
4	RSA225	SEL 194	Naya Luna	Pokaran	Jaisalmer	26.62153	71.58829
5	RSA226	SEL 194	Naya Luna	Pokaran	Jaisalmer	26.62558	71.58246
6	RSA274	SEL 195	Naya Luna	Pokaran	Jaisalmer	26.64083	71.58605
7	RSA275	SEL 195	Naya Luna	Pokaran	Jaisalmer	26.63274	71.59008
8	RSA276	SEL 194	Naya Luna	Pokaran	Jaisalmer	26.62773	71.59484
9	RSA277	SEL 194	Naya Luna	Pokaran	Jaisalmer	26.62148	71.59838
10	RSA278	SEL 194	Naya Luna	Pokaran	Jaisalmer	26.61782	71.60192
11	RSA289	SEL 194	Naya Luna	Pokaran	Jaisalmer	26.61714	71.62101
12	RSA293	SEL 195	Motisar	Bhanyana	Jaisalmer	26.63957	71.60723
13	RSA294	SEL 195	Motisar	Bhanyana	Jaisalmer	26.64486	71.59981
14	RSA341	SEL 195	Motisar	Bhanyana	Jaisalmer	26.65391	71.60882
15	RSA343	SEL 195	Motisar	Bhanyana	Jaisalmer	26.64118	71.61789
16	RSA345	SEL 195	Motisar	Bhanyana	Jaisalmer	26.62983	71.62431
17	RSA348	SEL 194	Motisar	Bhanyana	Jaisalmer	26.61089	71.63743
18	RSA349	SEL 194	Motisar	Bhanyana	Jaisalmer	26.60612	71.64224
19	RSA207	SEL 194	Naya Luna	Pokaran	Jaisalmer	26.62894	71.56688

“Project 2”: Geo-coordinates of 19.5 MW Wind power project in Pratapgarh

S.	WTG No	Village	Taluk	District	Latitude	Longitude
1	ORPDT_01	Ambirama	Arnod	Pratapgarh	23.5622	74.8370
2	ORPDT_02	Ambirama	Arnod	Pratapgarh	23.5653	74.8353
3	ORPDT_03	Ambirama	Arnod	Pratapgarh	23.5674	74.8357
4	ORPDT_04	Ambirama	Arnod	Pratapgarh	23.5708	74.8410
5	ORPDT_05	Ambirama	Arnod	Pratapgarh	23.5713	74.8352
6	ORPDT_06	Ambirama	Arnod	Pratapgarh	23.5747	74.8396
7	ORPDT_07	Ambirama	Arnod	Pratapgarh	23.5773	74.8426
8	ORPDT_08	Ambirama	Arnod	Pratapgarh	23.5602	74.8371
9	ORPDT_09	Ambirama	Arnod	Pratapgarh	23.5946	74.8387
10	ORPDT_10	Ambirama	Arnod	Pratapgarh	23.5843	74.8449
11	ORPDT_11	Ambirama	Arnod	Pratapgarh	23.5872	74.8486
12	ORPDT_12	Ambirama	Arnod	Pratapgarh	23.5884	74.8428
13	ORPDT_13	Ambirama	Arnod	Pratapgarh	23.5919	74.8410

The WTGs from ORPDT_01 to ORPDT_07 are connected to Feeder 07 while rest of the WTGs are connected to Feeder 08.

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

Organization name	Orange Renewable Power Private Limited
Contact person	Mr. Pavan Kumar Gupta
Title	Sr. Engineer
Address	301B, 3RD FLOOR, D-21 CORPORATE PARK, SECTOR-21, DWARKA, NEW DELHI-110077
Telephone	011- 30501110-03
Email	info@orangerenewable.net

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

Organization name	Orange Jaisalmer Wind Energy Private Limited
Role in the project	Part of the bundle project activity. Has given the sole authority to “ORPPL” for any decision related to VCS process.
Contact person	Mr. Pavan Kumar Gupta
Title	Sr. Engineer
Address	301B, 3RD FLOOR, D-21 CORPORATE PARK, SECTOR-21, DWARKA, NEW DELHI-110077

Telephone	011- 30501110-03
Email	info@orangerenewable.net

Organization name	Infinite Solutions
Role in the project	Carbon Consultant
Contact person	Mr. Jimmy Sah
Title	Head Sustainability
Address	611, Chetak Centre Main, RNT Marg Indore
Telephone	+91 9644130430
Email	jimmy@infisolutions.org

7. The quantified emission reduction calculation for the monitoring period is correct and conservative. Assessment team also compared actual VER with the estimated VER and found that the actual VER is 12.41% lower than the estimated emission reduction which is due to low PLF during the monitoring period.

The details calculation is as follows:

Parameters	tCO ₂ e
Annual Emission Reduction as per registered PDD	102,870
Emission Reductions for the monitoring period (01/04/2017-31/03/2018) as per registered PDD	102,870
Emission reductions achieved in monitoring period (01/04/201731/01/2018)	90,107
Percentage of variation when compared with estimated ERs in VCS PD	-12.41%

2 VERIFICATION PROCESS

2.1 Method and Criteria

Verification Scope: The scope is defined as an independent and objective review of the Monitoring report (MR) prepared as per the registered PD and registered approved methodology ACM0002 version 16. The MR is reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board and VCS standard and guideline version 3.7, including the approved baseline and monitoring methodology ACM0002 version 16. The verification was based on the requirements in the CDM Validation and Verification Standard (VVS version 01 for the project activity), CDM project standard version 01 for the project activity, CDM project cycle procedure version 01 for the project activity and VCS program guideline and standard version 3.7

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

Verification Process: The project assessment is based on the “Clean Development Mechanism Validation and Verification Standard version 01 for the project activity and VCS standard and program guideline version 3.7 and is conducted using standard auditing techniques to assess the correctness of the information provided by the project participants. Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), and relevant host country experience for evaluating the VCS project activity are appointed.

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

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

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

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
Mr. Sukanta Das	LA	YES	YES	YES	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 and other relevant criteria to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources has been done. A complete list of all documents and evidence material reviewed is included in this report below in appendix 1

Follow-up interviews

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

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 4 submitted by PP on 11/05/2018 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.	Lalwani	Sunil	Site In charge, Pratapgarh	30/03/2018	Implementation of the project and monitoring	Mr. Sukanta Das
2	Alam	Arjoo	Site In charge, Jaisalmer	30/03/2018	Implementation of the project and monitoring	Mr. Sukanta Das
2	Singhvi	Sumeet	MD, Infinite solution	30/03/2018	Baseline emission calculation, achieved emission reduction for the monitoring period, monitoring process	Mr. Sukanta Das

2.4 Site Inspections

Duration of on-site inspection: 30/03/2018				
No.	Activity performed on-site	Site location	Date	Team member
1.	Assessment team checked the implementation of the project, Baseline emission, Emission reduction calculation, technical description of the project and Monitoring. Assessment team also checked that whether the monitoring plan as described in the 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.	The project activity is located at Jaisalmer and Pratapgarh districts of Rajasthan State, India	30/03/2018	Mr. Sukanta Das

2.5 Resolution of Findings

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

The final MR Version 4 submitted by PP on 11/05/2017 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	00	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	
Monitoring plan	00	00	00
No Net harm assessment	00	01	
Local stakeholder consultation	00	01	
Others (please specify)-Matter related to breakdown details	00	02	00
PP declaration – Related to participation in other GHG program for the monitoring period			
Total	00	07	00

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

2.5.1 Forward Action Requests

This is 4th periodic verification of the project activity and no FAR raised from previous 3rd verification.

2.6 Eligibility for Validation Activities

This section is not applicable for present verification.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

This section is not applicable for present verification.

3.2 Methodology Deviations

This section is not applicable for present verification.

3.3 Project Description Deviations

In the 1st monitoring period (31-March-2013 to 31-March-2015), there was deviation observed from the project description as described in the registered PD.

1. In the registered PD, the monitoring method for Net Electricity (EG_{facility,y}) was described in a very simplified manner. It described that, (EG_{facility,y}) will be calculated based on the difference in “export”, “import” and “transmission loss”, however, the PD did not explain the exact method of calculations. In the current monitoring report the detailed method of calculating (EG_{facility,y}) has been described under section 3.2 “Data and Parameters Monitored”.
2. The registered PD also described the source of data to be “JMRs”, which is correct. However, it has been clarified that the source of data is JMR along with “share certificate” provided by the O&M contractor. The above change in no way impact the project’s Additionality, Baseline and applicability of methodology.
3. Apart from the above, the registered PD also describes the voltage of Substation to be 220kV. However, it is corrected in the MR as the voltage of OJWEPL PSS is 220kV, OJWEPL GSS is 400kV and ORPPL GSS is 132kV. This change in the description as well

does not impact the project's Additionality, Baseline and applicability of methodology in any way.

3.4 Grouped Project

This is not a grouped project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

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

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

Feeder details are provided which is confirmed by the assessment team during the verification site visit and also from the individual joint meter statement by state electricity board (third party, Govt source) in where the feeder details are mentioned. The Feeder details are included in the MR and thus the CAR is closed.

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

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

“Project 1”: Geo-coordinates of 39.9 MW Wind power project in Jaisalmer

S. No	WTG No	PSS	Village	Taluk	District	Latitude	Longitude
1	RSA204	SEL 194	Luna Kala	Pokaran	Jaisalmer	26.64770	71.55631
2	RSA231	SEL 195	Luna Kala	Pokaran	Jaisalmer	26.65686	71.56304
3	RSA271	SEL 195	Luna Kala	Pokaran	Jaisalmer	26.65871	71.57321
4	RSA225	SEL 194	Naya Luna	Pokaran	Jaisalmer	26.62153	71.58829
5	RSA226	SEL 194	Naya Luna	Pokaran	Jaisalmer	26.62558	71.58246
6	RSA274	SEL 195	Naya Luna	Pokaran	Jaisalmer	26.64083	71.58605
7	RSA275	SEL 195	Naya Luna	Pokaran	Jaisalmer	26.63274	71.59008
8	RSA276	SEL 194	Naya Luna	Pokaran	Jaisalmer	26.62773	71.59484
9	RSA277	SEL 194	Naya Luna	Pokaran	Jaisalmer	26.62148	71.59838
10	RSA278	SEL 194	Naya Luna	Pokaran	Jaisalmer	26.61782	71.60192
11	RSA289	SEL 194	Naya Luna	Pokaran	Jaisalmer	26.61714	71.62101
12	RSA293	SEL 195	Motisar	Bhaniyana	Jaisalmer	26.63957	71.60723

13	RSA294	SEL 195	Motisar	Bhaniyana	Jaisalmer	26.64486	71.59981
14	RSA341	SEL 195	Motisar	Bhaniyana	Jaisalmer	26.65391	71.60882
15	RSA343	SEL 195	Motisar	Bhaniyana	Jaisalmer	26.64118	71.61789
16	RSA345	SEL 195	Motisar	Bhaniyana	Jaisalmer	26.62983	71.62431
17	RSA348	SEL 194	Motisar	Bhaniyana	Jaisalmer	26.61089	71.63743
18	RSA349	SEL 194	Motisar	Bhaniyana	Jaisalmer	26.60612	71.64224
19	RSA207	SEL 194	Naya Luna	Pokaran	Jaisalmer	26.62894	71.56688

“Project 2”: Geo-coordinates of 19.5 MW Wind power project in Pratapgarh

S.	WTG No	Village	Taluk	District	Latitude	Longitude
1	ORPDT_01	Ambirama	Arnod	Pratapgarh	23.5622	74.8370
2	ORPDT_02	Ambirama	Arnod	Pratapgarh	23.5653	74.8353
3	ORPDT_03	Ambirama	Arnod	Pratapgarh	23.5674	74.8357
4	ORPDT_04	Ambirama	Arnod	Pratapgarh	23.5708	74.8410
5	ORPDT_05	Ambirama	Arnod	Pratapgarh	23.5713	74.8352
6	ORPDT_06	Ambirama	Arnod	Pratapgarh	23.5747	74.8396
7	ORPDT_07	Ambirama	Arnod	Pratapgarh	23.5773	74.8426
8	ORPDT_08	Ambirama	Arnod	Pratapgarh	23.5602	74.8371
9	ORPDT_09	Ambirama	Arnod	Pratapgarh	23.5946	74.8387
10	ORPDT_10	Ambirama	Arnod	Pratapgarh	23.5843	74.8449
11	ORPDT_11	Ambirama	Arnod	Pratapgarh	23.5872	74.8486
12	ORPDT_12	Ambirama	Arnod	Pratapgarh	23.5884	74.8428
13	ORPDT_13	Ambirama	Arnod	Pratapgarh	23.5919	74.8410

The WTGs in both the sites are commissioned on 31/03/2013. Assessment team checked the commissioning certificate and confirmed that the date of Commission for the WTGs are correct.

The quantified emission reduction calculation for the monitoring period is correct and conservative. Assessment team also compared actual VER with the estimated VER and found that the actual VER is 12.41% lower than the estimated emission reduction due to low PLF for the monitoring period. NO overestimation of VERs is thus envisaged and thus assessment team confirm that the actual emission reduction calculation achieved is conservative and correct.

The assessment team confirmed that there is no proposed or actual change to the project design during this monitoring period. However, in the 1st monitoring period (31-March-2013 to 31-March-2015), there was deviation observed from the project description as described in the registered PD as follows.

1. In the registered PD, the monitoring method for Net Electricity ($EG_{\text{facility},y}$) was described in a very simplified manner. It described that, ($EG_{\text{facility},y}$) will be calculated based on the difference in “export”, “import” and “transmission loss”, however, the PD did not explain the exact method of calculations. In the current monitoring report the detailed method of calculating ($EG_{\text{facility},y}$) has been described under section 3.2 “Data and Parameters Monitored”.

2. The registered PD also described the source of data to be “JMRs”, which is correct. However, it has been clarified that the source of data is JMR along with “share certificate” provided by the O&M contractor. The above change in no way impact the project’s Additionality, Baseline and applicability of methodology.
3. Apart from the above, the registered PD also describes the voltage of Substation to be 220kV. However, it is corrected in the MR as the voltage of OJWEPL PSS is 220kV, OJWEPL GSS is 400kV and ORPPL GSS is 132kV. This change in the description as well does not impact the project’s Additionality, Baseline and applicability of methodology in any way.

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

It was observed that the monitoring plan was implemented as per the requirement of the registered PD and Final Validation report. The organisational role and responsibility as mentioned in the registered PD is followed onsite. All the monitoring equipment was calibrated as per the specified interval in the registered PD. All the emergency preparedness as mentioned in the registered PD is followed onsite and no discrepancies were found regarding the same.

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

The project is not involved in any other form of GHG emission program and VERs generated from this verification will not be used for other trading program to avoid any kind of double counting. The same is confirmed by the PP during the verification site visit. Assessment team also conducted independent review regarding the same and found that the statement of the PP is accurate and project is not involved in any other kind of GHG trading for the present verifications/monitoring period.

It was also observed during the verification process is that project is not rejected by any other GHG program around the world. The project is registered by VCS board and the registered PD and registered FVR is used to assess the present verification. The following web sites were checked to confirm the same:

1. <https://www.recregistryindia.nic.in/>
2. <http://cdm.unfccc.int/>
3. <http://www.goldstandard.org/>
4. www.v-c-s.org

Assessment team hereby also confirms from the declaration made by PP dated 11/04/2018 the projects are not registered under the REC mechanism of India and the same is cross-checked at <https://recregistryindia.nic.in>. Moreover as per state tariff policy the project is not eligible to receive REC benefits as it is selling power to State electricity grid.

The assessment team observed that the project is in line with the registered PD except for the deviations done in the 1st monitoring period dated 01 April 2017 to 31 March 2018, FVR and approved methodology and thus no clarification/deviation is sought.

4.2 Accuracy of GHG Emission Reduction and Removal Calculations

Means of verification	The verification team assessed whether the data and calculations of GHG emission reductions achieved resulting from the VCS PD. The verification team has checked whether calculations of baseline GHG emissions, project GHG emissions and leakage GHG emissions have been carried out in accordance with the formulae and methods described in the monitoring plan of the VCS PD
Findings	CAR 03 was raised during the verification process and closed successfully. Please refer Appendix 2 of this report for the detail closure of the CAR
Conclusion	The baseline Emissions for a given year is calculated by multiplying the energy baseline (EB) with the regional grid emission factor. The regional grid in this case would be the 'NEWNE' Formula Used:- $BE_y = EG_{\text{facility},y} \times EF_{\text{grid,CM},y}$ Where BE_y = Baseline emission for year 'y' $EG_{\text{facility},y}$ = Quantity of net electricity supplied to the grid during the year y ; and $EF_{\text{grid,CM},y}$ = Emission factor of the Grid <u>Ex ante Parameters:</u> 1. $EF_{\text{grid,OMsimple},y}$: Parameter is fixed ex-ante for the entire crediting period and as per the validated VCS PD same is fixed at 0.9857tCO₂/MWh. Verification team found same was used in the ER calculations. The operating margin emission factor is a 3-year generation-weighted average (2011-14) Data calculated to be 0.9857. The value is sourced from Central Electricity Authority: CO₂ Emission Database CEA CO₂ Baseline database Version 10 which is in accordance to the registered PD. 2. $EF_{\text{grid,BM},y}$: Parameter is fixed ex-ante for the entire crediting period and as per the validated VCS PD same is fixed at 0.9495tCO₂/MWh. Verification team found same was used in the ER calculations. The Build Margin would be calculated ex ante and fixed during the crediting period. For ex ante calculation the most recent data (2013-14) available has been used and the build margin thus calculated is 0.9495. The value is sourced from Central Electricity Authority: CO₂ Emission Database CEA CO₂ Baseline database Version 10 which is in accordance to the registered PD. 3. $EF_{\text{grid,CM},y}$: Parameter is fixed ex-ante for the entire crediting period and as per the validated VCS PD same is fixed at 0.9766tCO₂/MWh. Verification team found same was used in the ER calculations. The date has been considered in accordance to the Tool to calculate emission factor of an electricity system. The tool guides to take 75% weightage of $EF_{\text{grid,OMsimple},y}$ & 25% weightage of $EF_{\text{grid,BM},y}$. The value is sourced from Central Electricity Authority: CO₂ Emission Database CEA CO₂ Baseline

	database Version 10 which is in accordance to the registered PD. <u>Ex-post parameter:</u> 1. EG_{facility,y}¹: Quantity of net electricity supplied to the grid during the year y As per the registered PD the value of net electricity generation supplied to the grid as per Monthly electricity share certificates or Joint Meter Reading Report forms the basis for calculation of the emission reductions; which can be cross checked from the invoice raised to DISCOM. The JMR includes, monthly recording of electricity export & import of GSS meter and Share certificate includes apportioned export & import of each project owner in case of ORPPL. The JMR directly provide the value of export and import for OJWEPL. The source of data is therefore in accordance to registered VCS PD and thus acceptable to the assessment team. Net electricity supplied to grid will be calculated as the difference of the measured values of “export” and “import” of electricity through the dedicated SEB energy meter (electronic tri-vector bidirectional main meter & check meter which measures both export & import concurrently) installed at the delivery point (i.e. the connected substation). Net electricity generated and supplied by the project (Wind plant/unit to the grid = Electricity Export to the grid - Electricity Import from the grid Monthly meter readings are taken from the main and check meter installed at the substation and certified by the representatives of SEB Officials and the representatives of the project proponent during the billing cycle for each month of the monitoring period. The Net electricity generation from the Wind plant is thus correct. All the parameters are monitored and recorded as per the monitoring plan in the registered PD. The verification team has crosschecked the revised emission reduction sheet and monitoring report data with the JMR sheet and invoice bills and found all the values are matching. Apportioning methods are used for both the sites OJWEPL and ORPPL, however the Operation and Maintenance entity managing the sites are different. Apportioning is carried out considering the sum of generation at each WTG connected to a common substation and total electricity exported from the substation (common meter). The loss percentage as observed between the sum of values at WTG and sub-station is then deducted to arrive a net export value for each individual WTG. The values at substation along with individual WTG are submitted and checked by the DISCOM officials and subsequently an invoice is raise by each PP to DISCOM. Both the sites use the same apportioning procedure but since the entities are different thus reporting of data is different at each site.
--	--

¹ If the project activity is the installation of a Greenfield power plant, then: $EG_{PJ,y} = EG_{facility,y}$

	1. At OJWEPL Suzlon Energy limited is the Operation and Maintenance contractor and they share only the respective data with individual clients connected to the common sub-station. They calculate the values for each client and get the values checked by the DISCOM. Thus for OJWEPL direct values for export and import are available and have been used. 2. For ORPPL Re-gen Infrastructure is the Operation and Maintenance contractor and provide data for all the WTGs connected to the sub-station. They calculate the values for each client and get the values checked by the DISCOM. Thus for ORPPL direct values for export and import are available along with the calculation approach followed by the O&M contractor. Since this data is available the same was included in the monitoring plan and was checked and validated by the DOE. The text “GSS Export – PSS Total Export would not be negative” has been removed in the revised MR ver.4.0 The assessment team has checked JMR sheets, breakup sheets, revised MR and ER sheet and found acceptable. Moreover, for Wind turbine (Green field renewable project) as per the registered PDD and approved methodology ACM 0002 version 16, 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 for current monitoring period = baseline emission for the current monitoring period. The project activity involves in harnessing wind 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 Emission reductions in year y (tCO₂e/yr) BE_y Baseline emissions in year y (tCO₂e/yr) PE_y Project emissions in year y (tCO₂e/yr)=0 Hence, ER_y= BE_y
--	---

4.3 Quality of Evidence to Determine GHG Emission Reductions and Removals

Means	of The verification team checked the Calibration details of the monitoring meters with the calibration certificates.
--------------	---

verification	
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 ABT bi-directional energy meters (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 JMR (Joint Meter Reading) electricity generation statements. 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 PDD. On-site visit and interview with O&M personnel also conforms the same. During commissioning of the WTGs panels monitoring meters of accuracy class i.e. 0.2s were installed. The meters are monitored continuously & cumulative readings are taken at the end of the month by joint meter reading procedure. These are sealed by State Utilities to avoid malfunctioning with meter readings. Meter is calibrated once in 5 years by the meter testing division of the state utility 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 submitted by PP and found that calibration frequency of 5 years is complied. No delayed calibration is observed and thus the same is found appropriate.

4.4 Non-Permanence Risk Analysis

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

5 SAFEGUARDS

5.1 No Net Harm

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

The project activity promotes environmental and socio-economic well-being as it results in zero GHG emissions due to installation and operation of clean, renewable energy technology for electricity generation.

5.2 Local Stakeholder Consultation

All the stakeholders are happy with the implementation and operation of the project activity and no negative comments envisaged for the project activity. There was no change in technical project description from the registered VCS PD. Assessment team confirmed the same during the verification site visit. However CAR 04 is raised during the verification process. Please refer Appendix 2 for the detail closure of the CAR. Also, as best practice method PP also placed a grievance register onsite to record any grievance from the stakeholders during and after the implementation of the project activity. Assessment team checked the grievance register maintained onsite and no negative comments were observed for the project activity. Local people are happy as the project generated employment opportunities and thus the living standards in and around the vicinity of the project is increased and thus assessment team confirms that local stakeholders have no issue with this project activity after implementation and continuous operation.

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

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

Name of the stakeholder	Shyam
Occupation	Villager
DOE questions: Did the power plant discharge any harmful pollutants? Answer: NO the plant does not discharge any harmful pollutants. DOE questions: Did the power plant destroy any crop fields? Answer: The plant is implemented in barren land and there were no any fertile land or crop which is damaged.	

6 VERIFICATION CONCLUSION

Applus+ Certification has been engaged by Orange Renewable Power Private Limited to perform the 4th periodical verification of the “Bundled Wind Power Project in Rajasthan by Orange Renewable Power Private Limited”

The management of Orange Renewable Power Private 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 and the applied methodology ACM0002 version 16.

Our verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakesh accord, as well as those defined by the CDM Executive Board. Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. The verification 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.

Verification period: 01/04/2017 to 31/03/2018

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

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
Year 2017	76,370	0	0	76,370
Year 2018	13,737	0	0	13,737
Total	90,107	0	0	90,107

APPENDIX 1: DOCUMENTS REVIEWED OR REFERENCED (VERIFICATION)

No.	Author	Title	References to the document	Provider
1	NA	Commissioning certificates of the WTGs implemented in the project site.	NA	Project participant
2	NA	Contract of the project participant with the DOE	Contract document signed between PP and DOE	Project participant
3	NA	Technical specifications of wind turbine generators from manufacturers	Manufacturer technical specifications	Project participant
4	NA	Power Purchase agreement for the project activity	NA	Project participant
5	NA	Registered PD dated 25/03/2015, version 02 http://www.vcsprojectdatabase.org/#/project_details/1465	NA	Project participant
6	NA	Registered Final Validation report dated 30/03/2015 version 02 Final Verification report (3rd periodic)- dated 06/04/2017 version 01 http://www.vcsprojectdatabase.org/#/project_details/1465	NA	Project participant
7	NA	Emission Calculation sheet version 01 Emission Calculation sheet version 02 Emission reduction Calculation sheet version 03 (As per TR comments)	23/03/2018 11/04/2018 12/04/2018	Project participant
8	NA	The operational lifetime of the project activity from the manufacturer=(Technical specifications)	Manufacturer technical specifications	Project participant

9	NA	RBI: Reserve Bank of India www.rbi.org.in Ministry of Environment and forest: www.envfor.nic.in UNFCCC www.cdm.unfccc.int CEA: Central electricity authority www.cea.nic.in Income tax act 1961 http://law.incometaxindia.gov.in/DIT/ VCS: Verified Carbon Standard www.v-c-s.org	Reference link is provided.	Independent Search
10	NA	Tools/ guidelines used in the project activity • Tool to determine the remaining lifetime of the project activity in line with Annex 15 EB 50 • Tool to calculate the emission factor for an electricity system version 03 • Glossary of CDM terms version 07 • VCS verification report template version 03	UNFCCC CDM web site	UNFCCC
11	NA	JMR records for the complete monitoring period	JMR records	PP
12	NA	MR version 01 MR version 02 MR version 03(As per TR comments)	23/03/2018 11/04/2018 12/04/2018	PP

		MR Version 04 (As per VCS Comments)		
13	NA	Invoices for the complete monitoring period	Invoice	PP
14	NA	Break down details of the complete monitoring period	Log sheet	PP
15	NA	Declaration regarding no participation in other GHG program for the concerned monitoring period	Declaration dated 11/04/2018	PP

APPENDIX 2:

**CLARIFICATION REQUESTS, CORRECTIVE ACTION REQUESTS AND FORWARD
ACTION REQUESTS (CAR/CL/FAR)**

CAR ID	01	Date: 01/04/2018
Description of CAR		
During the site visit and subsequent document review it was observed that the details of feeder wise location of the Wind turbines is missing in the MR. Corrective action is sought in the respective section of the MR. The details implementation of the project activity timeline is missing in the MR. supporting documents are sought for the same.		
Project participant response		Date: 11/04/2018
The details of feeder wise location of the Wind turbines have been incorporated in the MR section 1.7. Further the details implementation of the project activity timeline is also been included in the MR version 2 section 1.1. The documents for the same are now provided to the DOE.		
Documentation provided by project participant		
MR version 2 section 1.1.		
DOE assessment		Date: 12/04/2018

Following are the observation of the DOE:

1. The details of the WTGs connected to the feeder is now include in section 1.7 of the revised MR version 02
2. The Detail implementation of the project activity is now included in section 1.1 of the revised MR Version 02.

Based on the above corrections, CAR is thus closed.

CAR ID	02	Date: 01/04/2018
Description of CAR		
The breakdown details of the Wind turbines are missing in the MR. Moreover, the supporting document regarding the breakdown details are not provided to the assessment team. Corrective action is sought in this regard.		
Project participant response		Date: 11/04/2018
There are no major breakdowns observed for the project during the current monitoring period. Further the break down details is provided to the DOE.		
Documentation provided by project participant		
<i>Break down log sheets are now provided to DOE</i>		
DOE assessment		Date: 12/04/2018
The break down details for both the project site is checked and found correct by the assessment team. No unforeseen incident occurred during the monitoring period and power plant undergone scheduled maintenance as per the manufactures specification. The plant log sheets are checked by the assessment team to confirm the same and thus CAR is closed.		

CAR ID	03	Date: 01/04/2018
Description of CAR		
The JMR sheets and Invoice for the months of Feb and March 2018 is missing. Emission reduction value is thus reserved and will further be analyzed on the submission of the documents.		
The comparison of actual VER and estimated VER is also missing in the MR.		

Corrective action is sought.	
Project participant response	Date: 11/04/2018
The JMR and invoice are attached herewith. The emission sheet is revised accordingly. Further a comparison of actual and estimated values as per the registration is carried out. The emission reductions are 12.41% less as compared to the estimated values.	
Documentation provided by project participant	
MR version 02 ER sheet version 02	
DOE assessment	Date: 12/04/2018
The JMR sheets and the invoices are checked for the complete monitoring period and thus assessment team confirms that the Emission reduction value for the complete monitoring period is correct. Also the actual value is 12.41% less than the estimated as because PLF during the monitoring period is low. This is usual scenario in India and DOE local and sectoral confirms the same. Based on the correction in the ER sheet and MR version 02, CAR is thus closed.	

CAR ID	04	Date: 01/04/2018
Description of CAR		
During the document review it is observed that "Local Stakeholder" are missing in the MR. Moreover, supporting documents are not shared with DOE. Corrective action is sought in this regard in the respective section of the MR.		
Project participant response		Date: 11/04/2018
A local stakeholder communication procedure has been adopted and supporting documents are attached herewith.		
Documentation provided by project participant		
LSHC supporting are submitted		

DOE assessment	Date: 12/04/2018
The grievance register is maintained onsite is checked by the assessment team during the verification site visit. No negative comments envisaged for the project activity. Assessment team also had a discussion with some of the stakeholders and all of them are happy with the implementation of the project activity as the project created job opportunities for the local villagers and improved their standard of living. Many of them are in favour of more such power project should come in the region. Based on the above discussion and document verification, CAR is thus closed.	

CAR ID	05	Date: 01/04/2018
Description of CAR		
As per section 1.9 of the VCS MR, the project is not participated in other GHG program and has not intended to pursue credits from other GHG program for the concerned monitoring period. Supporting documents and details regarding the same is missing in the MR. Also, PP needs to justify whether REC benefits is taken for the present Monitoring period covered under VCS. Corrective action is sought for the same.		
Project participant response		Date: 11/04/2018
An undertaking form of statement is mentioned in the MR itself. Further regarding REC benefits, since the project is selling power to state grid as per state tariff policy this is not eligible for REC benefits		
Documentation provided by project participant		
Undertaking letter dated 11/04/2018		
DOE assessment		Date: 12/04/2018
As undertaking that the project has not intended to pursue credits from other GHG program for the concerned monitoring period is checked by the assessment team and found correct. Moreover, as the project is selling power to the grid, hence it is not eligible for REC benefits (as per state tariff policy). Moreover, assessment team checked the Govt of India web site for REC benefits (https://www.recregistryindia.nic.in/) and confirmed that the project has no intention to claim REC benefits for the monitoring period. CAR is thus closed.		

CAR ID	06	Date: 01/04/2018
---------------	----	-------------------------

Description of CAR	
The calibration certificates for the Dalot site are not visible. Corrective action sought for the same	
Project participant response	Date: 11/04/2018
The calibration certificates for the Dalot site are attached with the documents provided to DOE.	
Documentation provided by project participant	
<i>Calibration certificates are now provided to the DOE</i>	
DOE assessment	Date: 12/04/2018
The calibration certificates are now checked and found correct. No delayed calibration is observed and thus CAR is closed.	

CAR ID	07	Date: 01/04/2018
Description of CAR		
During the document review it is observed that “No net Harm” are missing in the MR. Moreover, supporting documents are not shared with DOE. Corrective action is sought in this regard in the respective section of the MR.		
Project participant response		Date: 11/04/2018
Project being renewable no Socio- Negative effect observed		
Documentation provided by project participant		
<i>MR version 02</i>		
DOE assessment		Date: 12/04/2018
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. As project is a renewable energy project hence there is no negative environmental and socio impact effect observed. As per Central Pollution Control Board (Ministry of Environment & Forests, Govt. of India), final document on revised classification of Industrial Sectors under Red, Orange, Green and White Categories (February		

29, 2016). The present project activity falls under white category (Renewable energy) and thus practically have no effect on polluting environment.

Based on the above facts and revision of MR version 02, CAR is thus closed

APPENDIX 3: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS

Verification team member

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

Technical reviewer and approver of the verification and certification report

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

Short CVs of the Team:

1. Mr. Sukanta DAS, has done M. SC in (Electronics and Photonics) and M. Tech in (Energy technology) from Tezpur Central University/ Indian Institute of technology Bombay in India. He is a certified lead auditor for ISO 14001 EMS LA and ISO 9001 QMS LA from International registry for Certified Auditors (IRCA) and Certified Lean Management practitioner from Quality Council of India (QCI). He has more than Nine (9) years of working experience at TUV NoRD/ Re-consult/CRA/APPLUS certifications under various categories of projects stating from Renewable to waste to supercritical projects. He was JI/ CDM Lead Assessor in TUV NoRD and was involved in more than 100 CDM validation and verifications activities in Gold Standard, VCS, CDM projects as a team leader/technical reviewer / validator / verifier covering the sectoral scope 1, 13 technical areas 1.2/1.1/13.1. Currently he is associated with True Quality Certifications Private Limited and is empanelled with APPLUS certification to carry out GHG audit.
2. Mr. Hanshen (Denny) Xue (Master Degree in Environmental Engineering, Bachelor Degree in Thermal Engineering) is an Auditor appointed by Applus+ Certification for the GHG project assessment. He is based on Shanghai. He has 1.5 years of work experiences in CDM project development. Before he joined Applus+ Certification, he has been worked 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
JMR	Joint Metering reading
RBI	Reserve Bank Of India
PP	Project Participant

APPENDIX 5: CALIBRATION DETAILS OF THE METERS

Project	Meter	Meter number	Operation Period	meter location	Accuracy	LAST Calibration Date*
	GSS Main Meter	RJB90214 [#]	APR-2014 - PRESENT	GSS	0.2s	13/01/2015
	GSS Check meter	RJB90215 [#]	APR-2014 - PRESENT	GSS	0.2s	13/01/2015
	PSS Main Meter 1	RJB78194	Mar-2013 - Present	PSS	0.2s	28/04/2016
	PSS Check meter 1	RJB78200	Mar-2013 - Present	PSS	0.2s	28/04/2016
	PSS Main Meter 2	RJB78201	Mar-2013 - Present	PSS	0.2s	28/04/2016
	PSS Check meter 2	RJB78203	Mar-2013 - Present	PSS	0.2s	28/04/2016
ORPPL	GSS Main Meter	ASH13815	APR-2013 - Present	GSS	0.2s	30/03/2016
	GSS Check meter	ASH13816	APR-2013 - Present	GSS	0.2s	30/03/2016

*the validity of the calibration is based on CEA requirements of once in 5 years.

[#]The GSS Main Meter no. RJB80790 has now been replaced with a new meter with Serial no. RJB90214. The GSS Check Meter no. RJB80791 has now been replaced with a new meter with Serial no. RJB90215. Assessment team checked that the old meter were replaced by the new meter and serial number of the same is checked from the meter change certificates provided by State electricity board authority. The replacement occurred dated 17/04/2017 which is just an up gradation from tri-vector meter to ABT meter. The up gradation is required as per the new policy regulation of State electricity board. The old meter were running perfectly. The old meter were calibrated and the new installed meter were also

calibrated as confirmed by the assessment team during the site visit. The calibration records for old meter were also checked and assessment team confirmed that the old meters were also running successfully. Thus Emission reduction calculation is considered conservative and correct.