

VERIFICATION REPORT

POSITIVE CLIMATE CARE 4.67 MW BUNDLED GRID CONNECTED WIND POWER PROJECT ACTIVITY IN JAISALMER, RAJASTHAN, INDIA



Monitoring period:

01 JULY 2009 TO 01 OCTOBER 2012

URS Verification Private Limited

F-31, Sector -6, Noida -201301

Project Title	Positive Climate Care 4.67 MW Bundled Grid connected Wind Power Project Activity in Jaisalmer, Rajasthan, India
Version	03
Report ID	CCMS/000229

Report Title	Positive Climate Care 4.67 MW Bundled Grid connected Wind Power Project Activity in Jaisalmer, Rajasthan, India
Client	1.M/s Rajesh Construction Company Private Limited (formerly Rajesh Construction Co. Ltd.) 2.M/s Savla Twisters Pvt. Ltd. 3.M/s Vijay Industries 4.M/s Saurabh Agrotech Pvt. Ltd.
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Summary:

URS Verification Private Limited has performed the second periodic verification of the VCS project entitled "Positive Climate Care 4.67 MW Bundled Grid connected Wind Power Project Activity in Jaisalmer, Rajasthan, India" and VCS Registry Number 499. The verification includes confirming the implementation of the monitoring plan of the registered VCS PD and the application of the monitoring methodology as per AMS I.D, version 14. A site visit was conducted to check the implementation of registered monitoring plan and verify the data submitted in the monitoring report. URS confirms the following has been reviewed;

- a) The registered PD, including the monitoring plan and the corresponding validation opinion(s);
- b) Previous verification report;
- c) Monitoring report for the monitoring period under verification including emission reduction calculations sheets and all supporting documents;
- d) The applied monitoring methodology;
- e) Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board;
- f) All information and references relevant to the project activity's resulting in emission reductions

Any findings, restrictions of uncertainties related to the verification:

There are no restrictions of uncertainties related to this verification. Findings related to project implementation were raised and successfully closed during verification activity. There were 4 CARs & 1 CLs was raised which were close satisfactorily. The details of the findings (CARs & CLs) are provided in section 3.5 below.

Summary of the verification conclusion:

URS Verification Private Limited confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements. The GHG emission reductions were calculated on the basis of the approved methodology AMS-I.D. "Grid connected renewable electricity generation" version 14 and the monitoring plan included in the registered VCS – PD, dated 10/11/2009 (VCS ID 499).

Based on the information seen and evaluated we confirm that the implementation of the project has resulted in **17,756 tCO₂e** emission reductions during period 01/07/2009 up to 01/10/2012.

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1 INTRODUCTION

1.1 Objective

URS Verification Private Limited has been commissioned by Rajesh Construction Co. Pvt. Ltd, Savla Twisters Pvt. Ltd, Vijay Industries & Saurabh Agrotech Pvt. Ltd to perform an independent verification of its registered VCS project “Positive Climate Care 4.67 MW Bundled Grid connected Wind Power Project Activity in Jaisalmer, Rajasthan, India”, VCS Registry no. 499 for the reported GHG emission reductions for the given monitoring period 01/07/2009 up to 01/10/2012 (both dates included). The objective of the verification is an independent assessment by a Designated Operational Entity (“DOE”) of a proposed project activity against the defined set of criteria under the Verified Carbon Standard (VCS) version 3.3 and VCS Program Guide version 3.4. The VCS projects must undergo independent third party verification and certification of emission reductions as the basis for issuance of Verified Carbon Units (VCUs).

The objectives of this verification exercise are, by review of objective evidence, to establish that:

- The project activity has been implemented and operated as per the description of the project activity provided in the registered VCS-PD/01/ and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place;
- Monitoring report and other supporting documents are complete;

The actual monitoring systems & procedures and monitoring report conforms with the requirements of the approved monitoring plan and the approved baseline and monitoring methodology “ AMS I.D. “Grid connected renewable electricity generation, version 14”/5/

- The data is recorded and stored as per the monitoring methodology and approved monitoring plan.

1.2 Scope and Criteria

The scope of the verification is the independent and objective review and ex post determination of the monitored reductions in GHG emission by the project activity. The verification is based on the registered PD and the monitoring report. The project is assessed against the requirements of VCS Standard version 3.3/10/, VCS Program Guide /24/ and related rules and guidance.

URS Verification Private Limited has, based on the recommendations in the latest version of Verified Carbon Standard, version 3.3/10/ and employed a risk-based approach in the verification, focusing on the identification of significant reporting risks and the reliability of project monitoring.

1.3 Level of assurance

- Reasonable level of assurance
- Limited level of assurance

The level of assurance of this verification report is reasonable which is based on site visit, documents and evidences submitted to the verification team. The same was verified by the verification team and based on the review along with the opinion of technical expert, the assurance is found reasonable. Based on the process and the procedures conducted, URS provides a reasonable assurance that the project’s greenhouse gas assertion is materially correct and a fair representation of the greenhouse gas data and information.

1.4 Summary Description of the Project

The purpose of the project activity is to harness renewable wind power potential in different villages of Jaisalmer district in Rajasthan in India and enable displacement of fossil fuel based electricity generation.

There are three wind turbine generators (WTGs) of 1250 kW and the four WTGs of 230 kW capacity, totalling an installed capacity of 4.67 MW in different villages of Jaisalmer district in Rajasthan, India. The Project is promoted by M/s Rajesh Construction Company Private Limited (formerly Rajesh Construction Co. Ltd.)¹, M/s Savla Twisters Pvt. Ltd., M/s Vijay Industries & M/s Saurabh Agrotech Pvt. Ltd.

The name of the Rajesh Construction Company Limited has been changed to Rajesh Construction Company Private Limited on 16/11/2011. The same has been checked with the fresh certificate incorporation dated 16/11/2011 issued by registrar of companies, Maharashtra, Mumbai Government of India and Ministry of Corporate Affair and found to be correct /16/. For Vijay Industries, in section 1.15 of the registered PD/01/, name of Vijay Industries is correctly mentioned however in the text at many places, the name of PP is mentioned as Vijay Industries Limited, this correction is done in the revised MR. it is also cross verified with the recent invoices/sales receipt/11/ and other supporting documents provided by PP.

The Rajesh Construction Company Private Limited & Savla Twisters Private Limited are selling the electricity generated by their WTGs to the grid. The validation team has checked the power purchase agreement and for Rajesh Construction Company Private Limited/20/ & Savla Twisters Pvt. Ltd/21/ for the same.

However, Vijay Industries and Saurabh Agrotech Pvt. Ltd are wheeling the generated electricity for captive consumption to their own plants. The validation team has checked the Wheeling and Banking agreement of Vijay Industries/18/ and Saurabh Agrotech Pvt. Ltd/19/ and found to be appropriate to the WTGs mentioned in the VCS-PD/01/.

All the meters are therefore calibrated, sealed and managed by the state electricity utility Rajasthan Vidyut Prasaran Nigam Limited (RVPNL). The details of the Calibrations of the energy meters are provided in Appendix-1 of this report.

The location and details of the turbines with respect to the project activity have been verified during the site visit of the project activity and are found to be as per the details provided in the registered VCS-PD/01/. The geo-coordinates of the WTGs have also been verified by GPS during the site visit of the project activity and found to in line with the same provided in the registered VCS PD. The VCS- PD provides additional details regarding the project activities. The commissioning and unique identification details of the WTGs along with their nature of export of electricity to grid (i.e. sale or wheeling to grid) are as follows-

Table 1: Detail of the WTGs:

Sr. No.	Name of Project Promoter	Location	WTG capacity (MW)/	Location number	Latitude & Longitude	Commissioning Date	Nature of Export to Grid
1	Rajesh Construction Co. Pvt. Ltd	Village: Akal District: Jaisalmer State: Rajasthan	1.25	(Suzlon)/ J-137	N26°46'37.5" & E 71°05' 33.5"	31/10/2003	Sale to Grid/20/
			1.25	(Suzlon)/ J-132	N26°46'52.0" & E 71°05' 41.5"		
2	Savla Twisters Pvt. Ltd	Village: Soda Mada District: Jaisalmer State: Rajasthan	1.25	(Suzlon)/ J-224	N26°40'55.1" & E 70°52' 49.6"	30/04/2004	Sale to Grid/21/
3	Vijay Industries	Village: Themdarai District: Jaisalmer State: Rajasthan	0.23	(Enercon)/ VI-01	N26°45'24.5" & E 70°53' 25.7"	29/03/2003	Wheeling/18/
			0.23	(Enercon)/ VI-02	N26°45'30.5" & E 70°53' 25.8"		
4	Saurabh Agrotech Pvt. Ltd.	Village: Themdarai District: Jaisalmer State: Rajasthan	0.23	(Enercon)/ SAPL-01/SAL-01	N26°45'48.5" & E 70°53' 27.1"	29/03/2003	Wheeling/19/
			0.23	(Enercon)/ SAPL-02/SAL-02	N26°45'52.4" & E 70°53' 25.4"		

The project activity falls in sectoral scope 1 "Energy industries (renewable - / non-renewable sources)" and applies the approved methodology AMS I.D: "Grid-connected electricity generation from renewable sources (Version 14)"/5/. The main purpose of the project activity is:

- To generate electrical energy through sustainable means using natural wind power resources;
- To utilize the generated electricity output for selling it to the state electricity utilities and for captive use.
- To contribute to climate change mitigation efforts.
- To contribute to the sustainable development of the region.

2 VALIDATION PROCESS, FINDINGS AND CONCLUSION

2.1 Validation Process

The project activity is a registered project in registry with Project ID 499. The same can be accessed through the website

<https://vcsprojectdatabase2.apx.com/myModule/Interactive.asp?Tab=Projects&a=2&i=499&lat=26%2E777083&lon=71%2E092639&bp=1>).

2.2 Validation Finding

The project activity is a registered project in registry with Project ID 499. The same can be accessed through the website (<https://vcsprojectdatabase2.apx.com/myModule/Interactive.asp?Tab=Projects&a=2&i=499&lat=26%2E777083&lon=71%2E092639&bp=1>).

2.2.1 Gap Validation

The project activity is a registered project in registry with Project ID 499. The same can be accessed through the website (<https://vcsprojectdatabase2.apx.com/myModule/Interactive.asp?Tab=Projects&a=2&i=499&lat=26%2E777083&lon=71%2E092639&bp=1>).

The project is already validated under Voluntary Carbon Standard 2007.1 by another DOE (validation report)/9/ no supplementary validation, in accordance with VCS Registration and Issuance Process, is required.

2.2.2 Methodology Deviations

There are no deviations identified or applied by the project. The verification team confirms that the validated VCS PD/1/ complies with the requirements in the applied methodology AMS. I.D. "Grid connected renewable electricity generation, version 14/5/. The monitoring plan in the validated VCS PD/1/ is followed at site as well.

2.2.3 Project Description Deviations

No deviation is observed in the project description.

2.2.4 New Project Activity Instances

Not applicable as the project capacity is same as compared to the registered VCS PD. The project activity is not identified as a grouped project as the description in the validated VCS PD/1/ and validation report/09/.

2.3 Validation Conclusion

The project is already validated under Voluntary Carbon Standard 2007.1 by another DOE (validation report)/9/ no supplementary validation, in accordance with VCS Registration and Issuance Process, is required.

3 VERIFICATION PROCESS

3.1 Method and Criteria

URS follows a risk based verification approach, wherein a desk review of the project documentation is undertaken, which is followed by an onsite visit by the members of verification team. The verification Report is prepared by the verification team that is based on standard auditing practices and to capture the applicable VCS requirements.

To review the Project's GHG information, the following verification process was used:

- Document Review
- Development of the verification plan and sampling plan;
- Site visit;
- Evaluation of raw data, calculations, and supporting documentation for the period under review;
- Follow-up interaction with Rajesh Construction Company Pvt. Ltd, Savla Twisters Pvt. Ltd, Vijay industries & Saurabh Agrotech Pvt. Ltd. for corrective action or supplemental data as needed;
- Verification reporting (Draft Verification Report and Final Verification Report).

The criteria of this verification include the relevant rules and steps as set out in VCS Standard version 3.3 dated 04/10/2012 and VCS Program Guide version 3.4 dated 04/10/2012.

3.2 Document Review

- A desk review is undertaken, involving but not limited to,
- A review of the data and information presented to verify their completeness;
- A review of the monitoring plan and monitoring methodology, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures;
- An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.
- Cross-checks of data and information provided with documents provided and used for the validation.
- The list of document reviewed is included in the section 'References'.

3.3 Interviews

As part of the verification, the following on-site inspections have been performed by Mr. Ashok Kumar, Team Member qualified team leader and qualified Technical Expert (TA 1.2). Site visit was carried out on 09/11/2012. The site visit for this verification assessment was undertaken by the assessment team and details are mentioned below;

Location	Jaisalmer, Rajasthan		
Dates	09/11/2012		
Key points discussed	Name of person interviewed	Designation, Organization	
<ul style="list-style-type: none"> • Project design and implementation • Monitoring Plan • Monitoring data and Monitoring 	Ramesh Kumawat	Assistant Engineer, EIL	

Report		
<ul style="list-style-type: none"> Project design and implementation Technical equipment, including calibration and operation 	Gurjeet Singh	Technical in charge ,EIL
<ul style="list-style-type: none"> Monitoring Plan and management procedures Monitoring data 	Pura Ram Chaudhary	Villager, Haswa
<ul style="list-style-type: none"> QA/QC procedures 	Jeetendra Kumar	Supervisor, EIL
<ul style="list-style-type: none"> Calculation of Emission reduction & apportioning methodology 	Meenakshi Jain	CMD, Positive Climate Care Pvt Ltd (Project Consultant)
CDM requirements	Rajesh Parmar	Shift Incharge, Soda Mada (Suzlon)
<ul style="list-style-type: none"> Technical equipment, including calibration and operation 	Shankar Lal Loonayat	Section Incharge, Soda Mada-I (Suzlon)

The purpose of the interviews were to assess and confirm information and data provided in the Project Description and monitoring report, identify relevant competencies to assigned roles and responsibilities, and to assess the GHG management systems implemented onsite.

3.4 Site Inspections

A site visit is undertaken by members of verification team, involving but not limited to,

- An assessment of the implementation and operation of the VCS project activity as per the registered PD;
- A review of information flows for generating, aggregating and reporting the monitoring parameters;
- Interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the approved monitoring plan;

- A cross-check between information provided in the monitoring report and data from other sources such as plant log books, inventories, purchase records or similar data sources;
- A check of the monitoring equipments including calibration performance and observations of monitoring practices against the requirements of the PD and the selected methodology AMD 1.D, version 14;
- A review of calculations and assumptions made in determining the GHG data and emission reductions;
- An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

3.5 Resolution of Any Material Discrepancy

As an outcome of the verification process, the team can raise different types of findings.

In general, where insufficient or inaccurate information is available and clarification or new information is required the team shall raise a Clarification Request (CL) specifying what additional information is required.

Where a non-conformance arises the team raise a Corrective Action Request (CAR). A CAR is issued, where:

- I. Non-compliance with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- II. Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;
- III. Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;
- IV. Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants

The verification process may be halted until this information has been made available to comply with the requirements of the CDM Executive Board. Information or clarifications provided as a result of a CL may also lead to a CAR.

A clarification request (CL) will be raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met. All CARs and CLs raised during verification shall be resolved prior to submitting a request for issuance.

Resolution of Corrective Action Requests and Clarification:

Summary of Findings		CAR	CL	FARs
		Total Number of CARs	Total Number of CLs	Total Number of FARs
Date:	DD/MM/YYYY	Raised by:		Name of the assessment team member

<u>Type of Finding</u>	CAR/ CL	<u>S. No. of Finding</u>	----	<u>Reference</u>	Reference of finding for example- page no of MR
Details of the <u>Finding</u>:		DD/MM/YYYY			
Findings for not meeting the Requirements/Checklist questions as per table 1 or 2 as applicable.					
Project Participant Response			DD/MM/YYYY		
(Response provided by the PP)					

The Project Developer is given the opportunity to “close” outstanding CARs and respond to CLs.

Forward Action Requests (FARs) may be raised during verification for actions where the monitoring and reporting require attention and/or adjustment for the next verification period, which are for the benefit of future projects and future verification activities. These have no impact upon the completion of the verification activity.

All CARs, CLs and FARs for this verification period are included as below for this project activity.

Summary of Findings	CAR	CL	FAR
	4	1	NA

<u>Date:</u>	25/11/2012	<u>Raised by:</u>		Dr. Shilpy Gupta Mr. Ashok Kumar	
<u>Type of Finding</u>	CAR	<u>S. No. of Finding</u>	1	<u>Reference</u>	VCS
Details of the <u>Finding</u>:		25/11/2012			
PP to clarify the apportioning methodology as well as the line losses while determining net electricity supplied to the grid.					

$$= 19095660 - 18949335.3 = 146324.7 \text{ kWh}$$

Total Import from all 18 feeders at 33 KV JMR = 170340 kWh

Total Import from all 18 feeders at 220 KV JMR = 149066.6 kWh

Difference in (33 KV JMR- 220 KV JMR) Import = Line Loss

$$= 170340 - 149066.6 = 21273.4 \text{ kWh}$$

Line Loss calculation at individual WTG (J-224)-

Total generation from all Controllers connected to total 18 feeders = 19946250 kWh

Generation at Individual Controller of J-224 = 102802 kWh

Line loss (Export) from all 18 feeders = 146324.7 kWh

Line loss (Export) for J-224 = $\frac{146324.7}{19946250} * 102802 = 754 \text{ kWh}$

$$19946250$$

Line loss (Import) from all 18 feeders = 21273.4 kWh

Line loss (Import) for J-224 = $\frac{21273.4}{19946250} * 102802 = 110 \text{ kWh}$

$$19946250$$

Energy Export for J-224 at 220 KV = Energy Export for J-224 at 33 KV – Line Loss (Export)

$$= 97409 - 754 = 96655 \text{ kWh}$$

Energy Import for J-224 at 220 KV = Energy Import for J-224 at 33 KV – Line Loss (Import)

$$= 1056 - 110 = 946 \text{ kWh}$$

Net Export for J-224 at 220 KV = 96655 – 946 = 95709 kWh

Documents/ information provided by the Project Participant:

220 MW Wind Power unit by Suzlon Energy Limited (SEL) for 220KV for Soda Mada Substation in Jaisalmer dated 01/04/2011.

Reasoning for acceptance or non-acceptance:

09/12/2012

Method used for apportioning is verified by the apportioning of electricity in break up sheet by Suzlon Energy Limited dated 01/04/2011 as well as it is incorporated in the revised Monitoring report which is done as per the following method-

Break up Energy Export = (EB Meter Export (JMR) X Individual Controller generation) /

Total generation from all Controllers of WTGs connected to Feeder

Break up Energy Import = (EB Meter Import (JMR) X Individual Controller generation) / Total generation from all Controllers of WTGs connected to Feeder

Net export =Export-Import

Apportioning methodology as well as line losses while determining net electricity supplied to the grid is verified with the breakup sheet of the wind power unit by Suzlon Energy Limited (SEL) for 220kV for Soda Mada substation in Jaisalmer, 33 KV JMR for all feeders including SEL-7 for the month March 2011 & 220 KV JMR for March 2011. Assessment Team has verified these documents. Hence it is accepted. However PP needs to provide the source of all the input parameters used in the calculation mentioned above.

Close out by Lead Assessor (OPEN)	09/12/2012
Project Participant Response	13/02/2013

All the supporting documents for the above calculation have been provided to DOE.

Documents/ information provided by the Project Participant:

- Controller data (for the month March-2011) of all the 10 WTGs (including J-224) connected to SEL-7 feeder
- 33 KV JMR for all feeders including SEL-7 for the month March 2011
- 220 KV JMR for March 2011

Reasoning for acceptance or non-acceptance	16/02/2013
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Each and every input values used for the demonstration of apportioning as well as line losses while determining net electricity supplied to the grid by Savla Twisters Pvt. Ltd. For 1.25 MW WTG for the month of March 2011 is verified by the Assessment Team.

Assessment Team has verified total generation from all controller data from individual Project Proponents files i.e. Yamuna gases, Savla Twisters, REI Agro free India and Bhagwati hotels energy export/import data for Suzlon Energy Limited phase -7 is verified by page 4 of JMR March 2011 provided by PP.

Generation of individual controller J-224 is also verified by controller data for march 2011. Energy export

<p>reading for SEL-7 at 33kv is verified by JMR of March 2011 page -4 for feeder export data.</p> <p>Energy import meter reading for import is also verified by JMR march -11 page-4 for SEL-7 feeder import data.</p> <p>Total export for all 18 feeders at 33kV JMR is verified by the addition of export in the excel sheet for 220kV Mada GSSS march 2011.</p> <p>Feeder wise detail is given in JMR March 11 pdf file.</p> <p>Total export from all the 18 feeders at 220kV JMR is cross verified by page1 of file name JMR March11.</p> <p>Total import from all 18 feeders at 33kV JMR is verified by the addition of import of 18 feeders which are mentioned in 220kV Mada GSS March-11 excel file sheet break up Mada feeder.</p> <p>Total import for all 18 feeders at 33kV JMR is the addition of import of 18 feeders mentioned in 220kV Mada GSSS-March -11 excel file sheet break up Mada feeder.</p> <p>Total import from all 18 feeders is cross verified by 220 Mada GSS March 11 excel sheet.</p> <p>Energy export/import for J-224 at 220kV is cross verified by Savla Twister generation in page 81-82.</p> <p>Net Export and Import is also verified from Savla Twister Generation file.</p> <p>Based on the justification provided by PP as well as cross verification done by Assessment team for all the input parameters. CAR is closed.</p>	
Close out by Lead Assessor (CLOSED)	16/02/2013

<u>Date:</u>	25/11/2012	<u>Raised by:</u>	Dr. Shilpy Gupta Mr. Ashok Kumar		
<u>Type of Finding</u>	CAR	<u>S. No. of Finding</u>	2	<u>Reference</u>	VCS
<u>Details of the Finding:</u>		25/11/2012			
As per VCS –PD, Saurabh Agrotech Pvt. Ltd and Vijay industries are supplying electricity to the grid however it is not clear from the monitoring report which machines are wheeling to the grid. PP to clarify the same.					
<u>Project Participant Response</u>			07/12/2012		
The project proponents Vijay Industries (0.23 MW/ VIKL-01 & 0.23 MW/ VIKL-02) and Saurabh Agrotech (0.23 MW/ SAPL-01 & 0.23 MW/ SAPL-02) are wheeling the electricity to the grid.					

Documents/ information provided by the Project Participant:	
Wheeling and banking agreements have been provided to DOE for both the investors.	
Reasoning for acceptance or non-acceptance:	09/12/2012
From the Wheeling agreement for Vijay industries dated 19/03/2003 signed with Rajasthan Rajya Vidyut prasaran Nigam Limited, Jodhpur Vidyut Vitran Nigam Limited, Jaipur Vidyut Vitaran Nigam Limited and Enercon India Limited and for and Saurabh Agrotech Private Limited dated 19/03/2003 signed with and Rajasthan Rajya Vidyut Prasaran Nigam Limited, Jaipur Vidyut Vitran Nigam Limited, Enercon India Limited. It has been verified by the Assessment Team that both of them are wheeling electricity to the grid. It is also cross verified with the JMR of the Project Proponent Hence CAR#02 is closed.	
Close out by Lead Assessor	09/12/2012

Date:	25/11/2012	Raised by:	Dr. Shilpy Gupta Mr. Ashok Kumar		
Type of Finding	CL	S. No. of Finding	3	Reference	VCS
Details of the Finding:		25/11/2012			
PP needs to provide the following documents					
<ol style="list-style-type: none"> 1. Monthly credit reports by state electricity authority 2. Monthly invoices by WTG-owner 3. Yearly meter calibrations by state electricity authority 4. O&M agreements between WTG-owner and contractor 5. Commissioning certificates for the ETGs. 6. Verification reports of the last verification. 					
Project Participant Response			07/12/2012		
All the documents have been provided to DOE.					
Documents/ information provided by the Project Participant:					
<ol style="list-style-type: none"> 1. Monthly credit reports by state electricity authority 2. Monthly invoices by WTG-owner 					

<ol style="list-style-type: none"> 3. Yearly meter calibrations by state electricity authority 4. O&M agreements between WTG-owner and contractor 5. Commissioning certificates for the WTGs. 6. Verification reports of the last verification. 	
Reasoning for acceptance or non-acceptance:	09/12/2012
<p>PP has provided monthly credit reports by State electricity authority, Monthly invoices by WTG owner, Yearly meter calibrations by state electricity authority, O & M agreements between WTG owner and contractor, commissioning certificates for all the WTGs as well as previous verification report. All these documents are found acceptable to the Assessment Team except the calibration Certificates.</p> <ol style="list-style-type: none"> 1. From the calibration certificate of Rajesh Construction Company Private Limited, Savla Twisters Private Limited , Saurabh Agrotech Private Limited & Vijay Industries the time gap between the 1st and 2nd calibration and the 3rd and 4th calibration is more than 1 year; which is not inline with the requirement of registered VCS PD.PP needs to provide clarification. 2. PP also needs to clarify whether ‘the joint inspection/ test reports....’ are different from the calibration certificates. 	
Close out by Lead Assessor (OPEN)	09/12/2012
Project Participant Response	13/02/2013
<ol style="list-style-type: none"> 1. As per CDM EB meeting 52, Annex 60, the correction factor of 0.2% has been applied in emission reduction calculations for the period where calibration of meters has been delayed. 2. The joint inspection/test reports serve the same purpose as that of the calibration certificate. Any of these documents present/confirm the performance of the meters. 	
Documents/ information provided by the Project Participant:	
<ol style="list-style-type: none"> 1. Revised Monitoring report 2. Revised emission reduction calculation spreadsheet 	
Reasoning for acceptance or non-acceptance	16/02/2013
<p>As per CDM EB meeting 52, Annex 60 which is now superseded by Clean development mechanism validation and verification standard version 03.0, CDM-EB 70, Annex-3 dated 23/11/2012 the error correction of 0.2% has been correctly applied in emission reduction calculations for the current monitoring period where calibration of meters has been delayed. for the month of February, March & April in 2010 and for the month of March in 2012 for Rajesh Construction Company Pvt. Ltd, Savla Twisters Pvt. Ltd Saurabh Agrotech Pvt. Ltd & Vijay Industries. As a consequence emission reduction has reduced from 17759 to 17756.</p> <p>All the input parameters in the revised emission reduction sheet are verified by the assessment team. It is</p>	

acceptable to the Assessment Team Hence CL#03 is closed.	
Close out by Lead Assessor	16/02/2013

Date:	24/01/2013	Raised by:	Dr. Shilpy Gupta Mr. Ashok Kumar		
Type of Finding	CAR	S. No. of Finding	4	Reference	VCS

Details of the Finding:	25/10/2012
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1. PP is requested to write the title of the project activity separately in the title page of the Monitoring Report.
2. PP is requested to provide the complete name of the PPs in the entire Monitoring Report.
3. As per the JMR reports the WTGs of all the PPs are supplying electricity to Jodhpur Discom only, however the information in the Monitoring Report in section 1.1 is not consistent as it mentions Jaipur Discom also ; PP is requested to clarify the same and correct accordingly.
4. The name of the village is not as per the commissioning certificates as mentioned in the MR; PP is requested to clarify and correct accordingly.
5. PP is requested to correctly mention the name of the entity to which electricity will be supplied as it is not clear from JMR reports.
6. The location number of the WTGs of Vijay Industries is not consistent with the commissioning certificate; PP is requested to clarify and correct accordingly.
7. The location number of the WTGs of Saurabh Agrotech Pvt. Ltd. is not consistent with the commissioning certificate; PP is requested to clarify it and correct accordingly.
8. The description of the monitoring parameter EGy in section 3.2 of the MR is not as per the description provided in the PDD. Please correct the same.
9. Complete information is not provided in the table for the para meter EGy Controller. in section 3.2 of the MR.
10. PP to clarify in formula for Breakup of Energy Export the parameter used "Total readings from all Controllers of WTGs connected to Feeder" whether its import or export? in Section 3.3 of the MR.

<p>11. PP to clarify in formula for Breakup of Energy Import the parameter used “Total readings from all Controllers of WTGs connected to Feeder” whether its import or export in Section 3.3 of the MR.</p> <p>12. As per VCS Standard 3.3; VERs is not the correct terminology, please correct in the same entire report.</p>	
<p>Project Participant Response</p>	<p>13/02/2013</p>
<p>1. The title of the project activity has been mentioned separately in the title page of the Monitoring Report (MR).</p> <p>2. PP’s full name has been mentioned in the entire monitoring report.</p> <p>3. All the PPs are supplying electricity to Jaipur DISCOM; the same has been mentioned in section 1.1 of revised monitoring report.</p> <p>4. The WTGs of both PPs, i.e. Vijay Industries and Saurabh Agrotech (P) Ltd. are in village Themdarai only. However, Vijay's WTG is towards Gorera side while Saurabh's WTG is towards Hansuwal side This has been mentioned and clarified in the revised monitoring report and is in line with the VCS PD too.</p> <p>5. All the PPs are supplying the electricity to State Electricity Utility Rajasthan Vidyut Prasaran Nigam Limited –RVPNL which is also known as RRVPNL –Rajasthan Rajya Vidyut Prasaran Nigam Limited.</p> <p>6. Location numbers of Vijay Industries’ two WTGs are given as VI-01 and VI-02 in the commissioning certificate; whereas in Enercon (O & M contractor of PP) records, these are identified as VIKL-01 and VIKL-02, respectively. VIKL-01 and VIKL-02 numbers are also marked on the respective WTGs at site. The revised MR mentions both the numbering to avoid confusion.</p> <p>7. Location numbers of Saurabh Agrotech (P) Ltd.’s two WTGs are given as SAL-01 and SAL-02 in the commissioning certificate; whereas in Enercon (O & M contractor of PP) records, these are identified as SAPL-01 and SAPL-02, respectively. SAPL-01 and SAPL-02 numbers are also marked on the respective WTGs at site. The revised MR mentions both the numbering to avoid confusion.</p> <p>8. The description of the monitoring parameter EGy has been revised as per the VCS PD in section 3.2 of the MR.</p> <p>9. In accordance with VCS PD, the complete information in the table for the parameter EGy Controller has been mentioned in section 3.2 of the MR.</p> <p>10. In section 3.3 of the MR, formula for Breakup of Energy Export the parameter used “Total readings from all Controllers of WTGs connected to Feeder” refers to total generation (export) from all Controllers of WTGs connected to Feeder.</p> <p>11. Same response as mentioned in point 10.</p> <p>12. Correct terminology “VCUs” has been mentioned in revised monitoring report</p>	

Documents/ information provided by the Project Participant:	
Revised MR version 02 dated 12/02/2013	
Reasoning for acceptance or non-acceptance:	16/02/2013
<p>1. Title of the Project activity is now mentioned separately in the revised MR, version 02 dated 12/02/2013. Hence it is closed.</p> <p>2. Complete Name of the PP's are provided now in the revised MR version 02 dated 12/02/2013. Hence it is closed</p> <p>3. As per JMR, PP is supplying electricity to Jodhpur Vidyut Vitaran Nigam Limited however in the JMR in noted section it is mentioned "The Original readings of Power Produces have been furnished to SE, RPPC (JdVVNL) Heerapura, Jaipur which indicate JdVVNL is under Jaipur DISCOM. Based on it in section 1.1 of the revised MR, Jaipur DISCOM is mentioned. Hence it is closed.</p> <p>4. Name of the villages of different WTGs is now modified in the revised MR, version 02 dated 12/02/2013 which is cross checked with the commissioning certificates of the individual WTGs and found to be consistent with the commissioning certificates. Hence it is closed</p> <p>5. Name if the entity to which electricity is supplied is mentioned correctly in the revised MR, version 02 dated 12/02/2013. Hence it is closed</p> <p>6. Location Number of the WTGs for Vijay Industry is now revised in the MR and now it is consistent with the commissioning certificates. Hence it is closed</p> <p>7. Location Number of the WTGs for Saurabh Agrotech is now revised in the MR and now it is consistent with the commissioning certificates. Hence it is closed</p> <p>8. Description of EGy in the revised MR is as per VCS-PD. Hence it is closed.</p> <p>9. Information for EGy Controller is included in section 3.2 of the MR. Hence it is closed.</p> <p>10. Formula for Breakup of Energy Export parameter is now revised in the MR in section 3.3. Hence it is closed.</p> <p>11. Formula for Breakup of Energy Import parameter is now revised in the MR in section 3.3. Hence it is closed.</p> <p>12. Correct terminology as per VCS Standard is VCU's, now revised in the MR.</p>	
Close out by Lead Assessor (Closed)	16/02/2013

Date:	24/01/2013	Raised by:		Dr. Shilpy Gupta Mr. Manoj Srivastava																
Type of Finding	CAR	S. No. of Finding	5	Reference	VCS															
Details of the Finding:		24/01/2013																		
<p>In the Emission Reduction Sheet, PP is requested to address the following issues: -</p> <ol style="list-style-type: none"> 1. Rajesh construction: JMR for the month of March'11 is not consistent with the values provided in the invoice for the respective month. 2. Saurabh Construction- the data in energy generation certificates and JMR are not coherent (correlation between the data could not be done). Also JMR for some months for year 2012 are missing. 3. Vijay Construction- Wheeling Agreement is not provided. Also it is not clear whether the values which have to be verified should be taken from net energy for sale post wheeling or the generic pattern has to be followed. 4. Savla Twisters Generation- data from JMR could not be read and understood as the soft copies provided are not in good readable quality. 5. The nomenclature against some of the figures in the ER sheet has not been written in ER sheet. 6. The units have not been provided in the summary sheet of the ER calculation. 																				
Project Participant Response																				
<ol style="list-style-type: none"> 1. Rajesh construction - the correct JMR for the month March'11 has been provided to DOE. 2. Saurabh Agrotech –For a particular month, respective investor wise credit subdivision of energy (kWh) also known as credit sheets and bulk meter JMR showing total units from all investor are only provided to individual PP by Enercon personnel. For reference purposes, credit sheets of all investors for a particular month (September 2012) have been provided to DOE, which clearly shows the correlation between credit sheets and bulk meter JMR. 																				
<table border="1"> <thead> <tr> <th>Month Sep-2012</th> <th>Capacity</th> <th>Export</th> <th>Import</th> <th>Net Export</th> </tr> </thead> <tbody> <tr> <td>Bulk Meter generation 138.81 MW windfarm</td> <td>138.81</td> <td>8685000</td> <td>47500</td> <td>8637500</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						Month Sep-2012	Capacity	Export	Import	Net Export	Bulk Meter generation 138.81 MW windfarm	138.81	8685000	47500	8637500					
Month Sep-2012	Capacity	Export	Import	Net Export																
Bulk Meter generation 138.81 MW windfarm	138.81	8685000	47500	8637500																

Individual PP wise credit sheets	2.3	137374	752	136622
	7.2	466735	2553	464182
	2.53	156570	857	155713
	1.84	115068	630	114438
	36.32	2477533	13549	2463984
	16.19	954031	5218	948813
	42.83	2672990	14620	2658370
	19.2	1117097	6109	1110988
	6.4	317042	1734	315308
	4	270560	1478	269082
Total of all investors connected with 138.81 MW windfarm	138.81	8685000	47500	8637500

- JMRs for the month April 2011, June 2011 and August 2012 have been provided to DOE.

3. Vijay Industries- Wheeling Banking agreement has been provided to DOE. Net export (kWh) values shown in credit sheets/invoices are taken for emission reduction calculations.

4. Savla Twisters – Clearly visible copies of JMR have been provided to DOE.

5. The complete nomenclature has been mentioned against all figures in the revised ER sheet.

6. The units of all values have been mentioned in summary sheet of the ER calculation.

Documents/ information provided by the Project Participant:

1. Rajesh construction - JMR for the month March'11

2. Saurabh Agrotech – Credit sheets of all investors connected with 138.81 MW wind farm for the month of September 2012. JMRs for Saurabh Agrotech for the month April 2011, June 2011 and August 2012.

3. Vijay Industries- Wheeling Banking agreement

4. Savla Twisters – Clearly visible copies of JMR for the month August 2009 and January 2010

5. Revised ER sheet.	
Reasoning for acceptance or non-acceptance:	16/02/2013
<ol style="list-style-type: none"> 1. Earlier JMR provided by PP was for Phase – 4, Suzlon Energy limited however the correct one is Phase -6. All the input data for the electricity export and import has been verified with the recent JMR for the month of March 2011 for Rajesh Construction which is now consistent with the values provided in the invoice. PP has provided the detailed ER calculation sheet for the period 01/07/2009 to 01/10/2012 Hence Accepted. 2. For Saurabh Agrotech Private Limited, Credit Sheet for 138 .81MW wind farm with 132 kV GSS Temdara for the month of September 2012 has two columns for the Credit of Share of Energy and Energy delivered at Bulk HT meter (kWh) but as per methodology AMS 1.D. version 14 we have to take into account only the Net Electricity in our emission reduction calculation; which is also cross checked with the individual JMR for the PP. Hence accepted. 3. The data in energy generation credit sheets/energy generation certificates. The value provided by PP in the response is cross verified by the assessment team. Values provided in the JMR for the month of April, June 2011 and for August 2012 have been cross verified by the assessment team. Hence it is closed. 4. Wheeling and banking Agreement for Vijay Industries signed by Vijay Industries & Rajasthan Rajya Vidyut Prasaran Nigam Limited, Jodhpur Vidyut Vitran Nigam Limited, Jaipur Vidyut Vitran Nigam Limited & Enercon India Limited dated 19/03/2003 is provided by PP. Net export (kWh) values shown in the credit sheet or invoices is cross verified by the assessment team. Hence accepted. 5. JMR for the month of August 2009 & January 2010 provided by Savla Twister is now readable and values provided in JMR are cross verified with the claimed emission reduction by the Assessment Team. 6. In the revised ER, PP has provided nomenclature for the VCUs before and after calibration correction hence it is closed. 7. The units of all values have been provided in the summary sheet of ER calculation. 	
Close out by Lead Assessor	16/02/2013

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

Implementation status of the project activity(s), including any material discrepancies between the project and the project description

During the verification a site visit was carried out. On the basis of this site visit and the reviewed project documentation it can be confirmed that w.r.t. the realized technology, the project equipments, as well as the monitoring and metering equipment, the project has been implemented and operated as described in the registered PD/1/. The commissioning certificates of all the WTGs were verified by the verification team and found to be appropriate and in line with the information provided in the MR and registered PD/01/. The implementation of the project activity was carried out between March 2003 to April 2004 the first WTG were commissioned on 29/03/2003/06/ by Vijay Industries and Saurabh Agrotech (P) Ltd and the last WTG was commissioned on 30/04/2004 by Savla Twisters Pvt. Ltd/06/.

Implementation status of the monitoring plan and the completeness of monitoring, including any material discrepancies between the project and the project description

The monitoring plan required for the ex-ante estimation of the emission reduction is also implemented at the project site as per the registered monitoring plan. The energy meters were found to be installed at the respective places during onsite verification conducted by the verification team. The WTG rated capacity, location/identification number, make, meter serial number and make etc. were verified from the name plates and found to be accurate. The power generated from the project activity has been evacuated and sold to the regional grids NEWNE grid as mentioned in the registered VCS PD/1/, the JMR/15/ and invoices/11/ raised by PP against JMR has been verified to confirm the same.

Any remaining issues from previous validation or verification

There has been no FARs from the previous monitoring period.

4.2 Accuracy of GHG Emission Reduction or Removal Calculations

The emission reduction calculation assessment included the review of project assumptions, raw data inputs and accuracy of calculations. The formulas and raw data inputs used to determine emission reduction calculations as described in the emission reduction calculation spreadsheets were first reviewed for compliance with AMS I.D, version 14 methodology/05/ and the validated Project Description document/01/.

URS reviewed emission reduction calculations for the reporting period, using the following specific tests and checks:

- Excel formulas that transposed data from one worksheet to another were checked.
- All formulas used were tested to AMS I.D. v14/05/ and to the validated PD/01/.
- Samples of spreadsheet aggregation formulas were checked for accuracy.
- Default factors were verified from the validated PD/01/.
- Data from project emissions were checked against samples of original invoices.
- Independent calculations, using aggregated spreadsheet data, were used to compare final results

As per the VCS PD/01/, parameters being monitored for this particular project activity are –

Data / Parameter	EG_y		
Data Unit	kWh		
Description	Total Net Electricity supplied to DISCOM		
Monitoring equipment	<p>The Joint meter reading is taken from the state utility owned energy meters; these meters record both energy exported and energy imported by the WTGs of the project activity. Therefore, Net Electricity Export to grid = Electricity export to grid – Electricity import from grid – Electricity Losses, if any (Transmission and Distribution losses) apportioned by SEB based on the monitored values.</p> <p>The total net electricity generated from the project activity will be calculated as the summation of the annual net electricity generation of the wind turbines in the project activity.</p>		
Measuring/ Reading /Recording frequency	<p>Continuous measurement and monthly recording. The monthly meter readings (Both main and check meters) are taken in the presence of Corporation/RVPNL officials on the first day of the following month. At the conclusion of each meter reading an appointed representative of PP and RVPNL will sign a document indicating the number of kWh indicated by the meter. The RVPNL meter readings are compared with the individual WTG meters and the export meter readings recorded at the site.</p>		
Data collection	<p>The data is obtained from the JMRs/ Credit reports issued by the respective state electricity utility.</p>		
Verified value, Unit	Vintage	EG _y (kWh)	
	01/07/ 2009 to 31/12/2009	34,99584	
	01/01/2010 to 31/12/2010	53,66928	
	01/01/2011 to 31/12/2011	54,92513	
	01/01/2012 to 01/10/2012	52,34661	
Cross checks	<p>The values mentioned in the ER spread sheet^{/3/} verified from the generation reports are cross-checked with the invoices^{/11/} raised by the PPs for the payment.</p>		
QA/QC procedures applied	<p>The electricity supplied to the grid is recorded with main meter and backup meter of accuracy class 0.2s</p> <p>The QA/ QC procedure for the monitoring of the net electricity exported to the grid by the project activity is in accordance with the registered monitoring plan of the project activity. The monthly electricity generation records have been further cross verified with</p>		

	the sales of invoices used by the PP for the electricity exported to the grid and purchase electricity invoices. The main meter and backup meter have been duly calibrated by different Calibration Agencies (i.e. Rajasthan Rajya Vidhyut Prasaran Nigam Limited, Yadav Measurement Private Limited, Jodhpur Vidhyut Vitaran Nigam Limited, C & I etc) the detail of the calibration in provided in Appendix -1 of the verification report.
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Data/ Parameter	EG_{Export}		
Data Unit	kWh		
Description	Total Electricity Exported by the WTG units in kWh		
Monitoring equipment	Meter readings measured from the Export meter		
Measuring/ Reading /Recording frequency	Monthly		
Data collection	The data is archived on paper and electronically for two years after the end of the last crediting period.		
Verified value, Unit	01/07/2009 to 31/12/2009	35,18516	
	01/01/2010 to 31/12/2010	54,15661	
	01/01/.2011 – 31/12/.2011	55,31648	
	01/01/.2012 – 01/10/.2012	52,53161	
	Total	19,718986	
Cross checks	The data is cross checked with sales receipts		
QA/QC procedures applied	Annual Calibration of all the meters is undertaken at required intervals and faulty meters will be duly replaced immediately. The data will be cross checked with sales receipts.		

Data/ Parameter	EG_{Import}		
Data Unit	kWh		
Description	The Total Electricity Imported by the WEG units		
Monitoring equipment	The electricity imported by each individual WEG of the project activity is measured using the import meter installed at the Grid		

	substation (GSS).	
Measuring/ Reading /Recording frequency	Monthly	
Data collection	The data is archived on paper and electronically for two years after the end of the last crediting period.	
Verified value, Unit	01/07/2009 -31/12/2009	18932
	01/01/2010 -31/12/2010	48733
	01/01/2011 -31/12/2011	39135
	01/01/2012-01/10/2012	18500
	Total	125300
Cross checks	The data will be cross checked with sales receipt.	
QA/QC procedures applied	Annual Calibration of all the meters is undertaken at required intervals and faulty meters will be replaced immediately.	

Data/ Parameter	EG_{yController}
Data Unit	kWh
Description	Electricity generation at WTG measured and as reported in the joint meter reading reports signed by representatives of state electricity board (kWh/year)
Monitoring equipment	Electronic Controller at individual WTG
Measuring/ Reading /Recording frequency	Measurement – Daily, Recording – Daily/Monthly
Data collection	The data will be archived on paper and electronically for two years after the end of last crediting period.
Verified value, Unit	kWh/year
Cross checks	The data is cross checked with sample controller data for a month.
QA/QC procedures applied	The electronic controllers are self calibrated to ensure and maintain online system diagnostics.

The onsite monitoring of parameters is found in line with the requirements of registered monitoring plan/01/. The general conditions set out for metering, recording, meter readings, meter inspections, test & checking and communication are as per the registered monitoring plan. Each meter is inspected and sealed by an official from state utility who also takes the meter reading and then translates it in the format specified by DISCOM (Rajasthan)” format, which indicates the net electricity exported. This forms the basis for the calculation of emission reductions. Apportioning methodology as well as line losses while determining net electricity supplied to the grid is cross verified with the breakup sheet /17/ of the wind power unit by Suzlon Energy Limited (SEL) for 220kV for Soda Mada substation in Jaisalmer, 33 KV JMR for all feeders including SEL-7 for the month March 2011/22/ & 220 KV JMR for March 2011/23/.

For Saurabh Agrotech Private Limited, Credit Sheet for 138 .81MW wind farm with 132 kV GSS Temdaral for the month of September 2012 has two columns for the Credit of Share of Energy and Energy delivered at Bulk HT meter (kWh) but as per methodology AMS 1.D. version 14 we have to take into account only the Net Electricity in our emission reduction calculation. Which is also cross checked with the individual JMR for the PP/15/.

Formula for energy export and import is also elaborated in the revised monitoring report version 02 dated 12/02/2013/13/.

Emission reductions (tCO ₂ e)	Values as per the registered VCS-PD	Actual values during the monitoring period	% change in emission reduction
	$(8293 * 1189 / 365 = 27015)$	17,756	34%

It is clear from the above table that in the present monitoring period emission reduction are 34 % lower than the expected emission reduction as per the registered VCS-PD/01/.

The actual emission reductions in the monitoring period are 17,756 tCO₂e which are less than the estimated emission reductions 27015 tCO₂e as per the registered VCS-PD/01/ hence there is no requirement of applying Guidelines on Application of Materiality in Verification /12/ in the project activity. The verification team has checked the monitoring data for the entire monitoring period and same is found to be correct. The verification team confirms that the claimed emission reductions are free from material errors, omissions or misstatements, with a reasonable level of assurance.

4.3 Quality of Evidence to Determine GHG Emission Reductions or Removals

The source of Net electricity exported to the grid, as reported in the PD is the joint meter readings taken at common evacuation system together with meter readings of individual WTG controller readings and the same were used by the project participant to calculate the EGY. DOE is able to check the values and found the same to be correct. The annual value of energy exported, imported and transmission loss is the summation of the monthly readings. The JMR signed by representatives of state electricity utility (RVPNL/DISCOM) are deemed to be more appropriate data for net electricity exported to the grid, as the values denote were jointly measured by PP and RVPNL/DISCOM, and duly signed and acknowledged by both the parties. The net electricity exported to the grid is then cross checked with the invoices /11/ raised

to DISCOM by the PP. The same procedure is in line with the registered PD/01/ and in line with the methodology. Hence, the evidence seemed to be deemed appropriate.

The emission factor for the NEWNE grid to which the project activity exports power to was determined as 0.9062 tCO₂e/MWh, a value fixed ex-ante during the validation of the project activity and sourced from the official source for grid emission factor in India. Thus the process of determining the emission reduction is appropriate and correct

Assessment of Data and Calculation of GHG emission reductions:

Emission reductions (ER) are calculated for the period 01/07/2009 to 01/10/2012 (including first and last day)

As per AMS I.D, version 14^{/5/}, emission reduction is calculated as follows:

$$\text{Baseline emission} = \text{Net electricity supplied to grid (MWh)} \times \text{Grid emission Factor (tCO}_2\text{/MWh)}$$

Total baseline emission for the project activity (01/07/2009 to 01/10/2012 vintage) is as follows:

$$BE_y = 17,756 \text{ t CO}_2\text{e}$$

As wind power projects fall under clean energy sources for electricity generation, the emission from the project is taken as zero.

$$PE_y = 0$$

Leakage estimation is also not required.

$$LE_y = 0$$

Summary of GHG Emission Reductions and Removals

$$\begin{aligned} \text{Emission Reduction} &= \text{Baseline Emission} - \text{Project Emission} - \text{Leakage} \\ \text{Emission reduction} &= 17,756 - 0 - 0 \\ &= 17,756 \text{ tCO}_2\text{e} \end{aligned}$$

4.4 Management and Operational System

URS interviewed key personnel during the site visit and assessed the management control which includes management staffing key positions with competent personnel management over sight and managing data.

The O&M service provider would be responsible for maintenance of the necessary spare parts and consumables for the maintenance of the WEGs such as anemometers, wind vanes and sensors, oil filters, batteries, auxiliary motors and pumps, WEG controllers, slip rings, limit switches and sensors, detergents & solvents etc. The service provider would also be responsible for supply of necessary main components of the WEG such as main gearboxes, blades, generators, towers, hubs, main shafts & bearings, ground and top controller and hydraulic systems. Additionally, spare meters would also be kept available at the site for replacement in case of failure of any of the monitoring equipments.

The service engineers at the site have been professionally trained. The service organization carries out activities like blade cleaning, Nacelle cleaning, Transformer oil filtration, control panel maintenance, etc. The O&M service provider would be responsible for watch ward and security of the turbines and the equipment, data logging for power generation, grid availability, machine availability, preparation & submission of monthly performance report in agreed format. They are also responsible for visual inspection of WTGs & all parts thereof and technical assistance including checking of various technical, safety and operational parameters of the equipment, trouble shooting and relevant technical services.

There was delay in calibration for all the PPs involved in the project at some point or other (details are provided in Annex-1) and therefore a conservative approach has been applied in the calculation of emission reductions. The Assessment team has verified the calibration certificates. In case of delayed calibration, assessment team has verified the delayed calibration as per para 238 of Clean development mechanism validation and verification standard version 03.0, CDM-EB 70, Annex-3 dated 23/11/2012/12/. URS concludes that –

As per point no 238 (a) PP has applied the maximum permissible error of the instrument to the measured values taken during the period between the scheduled date of calibration and the actual date of calibration. Since the accuracy class of the meter represents the maximum permissible error and energy meter accuracy class is 0.2s (2%); the maximum permissible error is reduced from the measured value.

The results of the delayed calibration do not show any errors in the measuring equipment and even if the error is there for some of the PPs it is smaller than the maximum permissible error. It is cross verified with the emission reduction sheet, version 02 dated 12/02/2013/14/. Summary of the delay in calibration for the energy meters are provided below –

Project Proponent	Delay Year	Delay Month	Net Export	Net Export after correction due to delayed calibration
Rajesh Construction Company Private Limited (1.25*2=2.50MW)	2010	February	189117	188731
	2010	March	210556	210121
	2010	April	315052	314409
	2012	March	224461	224004
Savla Twisters Private Limited (1.25 MW)	2010	February	86052	85877
	2010	March	95349	95154
	2010	April	135433	135159
	2012	March	111228	111002

Saurabh Agrotech Private Limited (0.46 MW)	2010	February	36062	35989
	2010	March	40690	40608
	2010	April	58074	57957
	2012	March	47317	47222
Vijay Industries (0.46 MW)	2010	February	35525	35453
	2010	March	40924	40842
	2010	April	58694	58576
	2012	March	47031	46936

The meter serial numbers in JMR reports issued by Suzlon and signed by JdVVNL dated August, 2011 and onwards are different as on 12.07.2011, 6.25 MW load get shifted from 33kV Devikot (Rural feeder) to new metering point by SEL-80 (Meter No. MSB 10311). The calibration certificate for the new meter has been provided by PP and is verified by the Assessment Team.

The client have established and implemented procedures to monitor the project activity and its operation. These procedures cover management responsibilities, data monitoring and reviewing procedures and have provided with reports.

All the daily and monthly records are archived in electronic copy and paper format.

URS concluded that the project participants were qualified for the functions that they performed. Project monitoring was observed to be documented in the project Document (version 02 dated 10/11/2009)/01/ and was corroborated to the final VCS monitoring report version 02 dated 12/02/2013/13/.

5 VERIFICATION CONCLUSION

The verification is based on the validated VCS PD/1/, validation report/9/, previous verification report/4/, the ER calculation sheet/14/ and the monitoring report/13/ for this project. Our verification approach was based on the requirements as defined under the VCS standard version 3.3/10/.

URS Verification Private Limited is responsible for the reported GHG emissions reductions on the basis set out within the verified monitoring period. The development and maintenance of records and reporting procedures are in accordance with the monitoring report version 02 dated 12/02/2013/13/.

An independent assessment was done understanding the risks associated with the monitoring and reporting of the parameters related to the GHG emission reduction for the period 01/07/2009 to 01/10/2012 based on the reported emission reductions in the final monitoring report version 02 dated 12/02/2013/13/. Sufficient evidence was gathered against the information provided and explanations were requested wherever necessary. The project was assessed for the calculation of the GHG emission reductions caused by the project activity.

The information provided by the project proponent was verified with the support of information provided and the evidence collected at the on-site inspection and is found to be correctly stated.

Reporting period: **01/07/2009 to 01/10/2012**

Verified GHG emission reductions or removals in the above reporting period:

<i>GHG Emission Reductions or Removals</i>	<i>tCO₂e</i>
<i>Baseline Emissions</i>	17,756
<i>Project Emissions</i>	00
<i>Leakage</i>	00
<i>Net GHG emission reductions or removals</i>	17,756

The vintage wise and project participant wise breakup of emission reduction is as follows:

Vintage Year	2009	2010	2011	2012	Total VCUs
Project Proponent					

Rajesh Construction Co. Pvt. Ltd. (2.5 MW)	1789	2432	2465	2588	9274
Savla Twisters Pvt. Ltd. (1.25 MW)	744	1304	1368	1123	4539
Vijay Industries (0.46 MW)	320	567	570	527	1984
Saurabh Agrotech Pvt. Ltd. (0.46 MW)	318	561	574	506	1959
Grand Total of Emission Reductions for the Project Activity					17,756

Signed on behalf of the Verification Body by Authorized Signatory

Signature: 

Name: Mukesh Singhal

Designation: CEO

Date: 11/03/2013

6 REFERENCES

/1/	VCS PD dated 10/11/2009, VCS ID 499 https://vcsprojectdatabase2.apx.com/myModule/Interactive.asp?Tab=Projects&a=2&i=499&lat=26%2E777083&lon=71%2E092639&bp=1
/2/	Monitoring Report , version 01 , dated 06/11/2012
/3/	Emission Reduction, version 01 dated 06/11/2012
/4/	Verification report, for crediting period from 01/04/2006 to 30/06/2009 https://vcsprojectdatabase2.apx.com/myModule/Interactive.asp?Tab=Projects&a=2&i=499&lat=26%2E777083&lon=71%2E092639&bp=1
/5/	Approved Methodology AMS 1.D, Grid connected renewable electricity generation, version 14
/6/	Commissioning certificates for all the WTGs 1.M/s Rajesh Construction Company Private Limited dated 31/10/2003 2.M/s Savla Twisters Pvt. Ltd. dated 30/04/2004 3.M/s Vijay Industries dated 29/03/2003 4.M/s Saurabh Agrotech Pvt. Ltd. dated 29/03/2003
/7/	Calibration Certificates for all the WTGs for the monitoring period from 01/07/2009 to 01/10/2012 1.M/s Rajesh Construction Company Private Limited 2.M/s Savla Twisters Pvt. Ltd. 3.M/s Vijay Industries 4.M/s Saurabh Agrotech Pvt. Ltd.
/8/	CEA:CO2 baseline database for emission factor, Version 4 dated October 2008,
/9/	Validation report, Project. No/Rev No:V-3-I-01-B-0050/01 dated 16/11/2009 by Perry Johnson Registrars CDM inc. https://vcsprojectdatabase2.apx.com/myModule/Interactive.asp?Tab=Projects&a=2&i=499&lat=26%2E777083&lon=71%2E092639&bp=1
/10/	VCS Standard Version 3.3 dated 04/10/2012
/11/	Invoices raised by the PPs - 1.M/s Rajesh Construction Company Private Limited for the monitoring period from 01/07/2009 to 01/10/2012 2.M/s Savla Twisters Pvt. Ltd. for the monitoring period from 01/07/2009 to 01/10/2012 3.M/s Vijay Industries for the monitoring period from 01/07/2009 to 01/10/2012 4.M/s Saurabh Agrotech Pvt. Ltd. for the monitoring period from 01/07/2009 to 01/10/2012
/12/	Clean development mechanism validation and verification standard version 03.0, CDM-EB 70, Annex-3 dated 23/11/2012.
/13/	Monitoring Report version 02 dated 12/02/2013
/14/	Emission Reduction sheet version 02 dated 12/02/2013
/15/	JMRs issued by

	<p>1.M/s Rajesh Construction Company Private Limited for the monitoring period from 01/07/2009 to 01/10/2012</p> <p>2.M/s Savla Twisters Pvt. Ltd. for the monitoring period from 01/07/2009 to 01/10/2012</p> <p>3.M/s Vijay Industries for the monitoring period from 01/07/2009 to 01/10/2012</p> <p>4.M/s Saurabh Agrotech Pvt. Ltd. for the monitoring period from 01/07/2009 to 01/10/2012</p>
/16/	Rajesh Construction Company Limited (registered on 30/08/2006 under the Companies Act, 1956 with registration number U70102MH2006PTC164188) to revised to Rajesh Construction Company Private Limited on 16/11/2011 in Registrar of Companies, Maharashtra, Mumbai by Government of India; Ministry of Corporate affair.
/17/	Controller data (for the month March-2011) of all the 10 WTGs (including J-224) connected to SEL-7 feeder for 220 MW Wind Power unit by Suzlon Energy Limited for 220 kV Substation Soda Mada Jaisalmer dated 01/04/2011.
/18/	Vijay Industries : Wheeling and banking agreement signed by Vijay Industries & Rajasthan Rajya Vidyut Prasaran Nigam Limited, Jodhpur Vidyut Vitran Nigam Limited, Jaipur Vidyut Vitran Nigam Limited & Enercon India Limited dated 19/03/2003
/19/	Saurabh Agrotech (P) Ltd : Wheeling and banking agreement signed by Saurabh Agrotech (P) Ltd and Rajasthan Rajya Vidyut Prasaran Nigam Limited, Jaipur Vidyut Vitran Nigam Limited, Enercon India Limited dated 19/03/2003.
/20/	Rajesh Construction Company Private Limited : Power Purchase Agreement signed by Rajesh Construction Company Private Limited, Suzlon Energy Limited, Rajasthan Rajya Vidyut Prasaran Nigam Limited, Jodhpur Vidyut Vitran Nigam Limited, Ajmer Vidyut Vitran Nigam Limited, Jaipur Vidyut Nigam Limited dated 10/10/2003
/21/	Savla Twisters Private Limited : Power Purchase Agreement signed by Savla Twisters Private Limited, Suzlon Energy Limited, Rajasthan Rajya Vidyut Prasaran Nigam Limited, Ajmer Vidyut Vitran Nigam Limited, Jaipur Vidyut Nigam Limited dated 19/02/2004
/22/	33 KV JMR for all feeders including SEL-7 for the month March 2011
/23/	220 KV JMR for March 2011
/24/	VCS Program Guide version 3.4 dated 04/10/2012.

Appendix A: Calibration Detail of the Meter:

Rajesh Construction Co Private Limited, 2.5 MW	SERIAL NUMBER	ACCURACY CLASS	MAKE	DATE OF CALIBRATION CERTIFICATE	DATE OF CALIBRATION	CALIBRATION ENTITY
MAIN METER	RJU02415	0.2s	Secure Meters Ltd.	29/01/2009	29/01/2009	Rajasthan Rajya Vidhyut Prasaran Nigam Limited/07/
BACKUP METER	RJU00336	0.2s	Secure Meters Ltd.	29/01/2009	29/01/2009	Rajasthan Rajya Vidhyut Prasaran Nigam Limited/07/
MAIN METER	RJU02415	0.2s	Secure Meters Ltd.	16/04/2010	16/04/2010	Electrical Research and Development Association/07/
BACKUP METER	RJU00336	0.2s	Secure Meters Ltd.	16/04/2010	16/04/2010	Electrical Research and Development Association/07/
MAIN METER	RJU02415	0.2s	Secure Meters Ltd.	12/03/2011	12/03/2011	Jodhpur Vidyut Vitaran Nigam Limited/07/
BACKUP METER	RJU00336	0.2s	Secure Meters Ltd.	12/03/2011	12/03/2011	Jodhpur Vidyut Vitaran Nigam Limited/07/
MAIN METER	MSB 10311	0.2s	Secure Meters Ltd.	15/03/2012	15/03/2012	C&I systems/07/ 2
BACKUP METER	MSB	0.2s	Secure Meters	15/03/2012	15/03/2012	C&I systems/07/

² On 12.07.2011, 6.25 MW load get shifted from 33kx devikot (Rural feeder) to new metering point by SEL-80 (Meter No. MSB 10311)

	10312		Ltd.			
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Savla Twisters Pvt. Ltd1.25 MW	SERIAL NUMBER	ACCURACY CLASS	MAKE	DATE OF CALIBRATION CERTIFICATE	DATE OF CALIBRATION	CALIBRATION ENTITY
MAIN METER	RJB 00102	0.2s	Secure Meter Ltd	30/01/2009	30/01/2009	Rajasthan Rajya Vidhyut Prasaran Nigam Limited/07/
BACKUP METER	RJB00257	0.2s	Secure Meter Ltd	30/01/2009	30/01/2009	Rajasthan Rajya Vidhyut Prasaran Nigam Limited/07/
MAIN METER	RJB 00102	0.2s	Secure Meter Ltd	22/04/2010	23/04/2010	Electrical Research and Development Association/07/
BACKUP METER	RJB00257	0.2s	Secure Meter Ltd	22/04/2010	23/04/2010	Electrical Research and Development Association/07/
MAIN METER	RJB 00102	0.2s	Secure Meter Ltd	10/03/2011	10/03/2011	Jodhpur Vidyut Vitaran Nigam Limited/07/
BACKUP METER	RJB00257	0.2s	Secure Meter Ltd	10/03/2011	10/03/2011	Jodhpur Vidyut Vitaran Nigam Limited/07/
MAIN METER	RJB 00102	0.2s	Secure Meter Ltd	14/03/2012	14/03/2012	C & I System/07/
BACKUP METER	RJB00257	0.2s	Secure Meter Ltd	14/03/2012	14/03/2012	C & I System/07/

Vijay Industries 0.46 MW	SERIAL NUMBER	ACCURACY CLASS	MAKE	DATE OF CALIBRATION CERTIFICATE	DATE OF CALIBRATION	CALIBRATION ENTITY
Main Meter -1	TNU 00946	0.2s	Secure Meter Ltd	29/01/2009	29/01/2009	Rajasthan Rajya Vidhyut Prasaran Nigam Limited/07/
Main Meter -2	TNU 00945	0.2s	Secure Meter Ltd	29/01/2009	29/01/2009	Rajasthan Rajya Vidhyut Prasharan Nigam Limited/07/
Main Meter -1	TNU 00946	0.2s	Secure Meter Ltd	06/04/2010	30/03/2010	Yadav Measurements Private Limited/07/
Main Meter -2	TNU 00945	0.2s	Secure Meter Ltd	06/04/2010	30/03/2010	Yadav Measurements Private Limited/07/
Main Meter -1	TNU 00946	0.2s	Secure Meter Ltd	26/03/2011	26/03/2011	Yadav Measurements Private Limited/07/
Main Meter -2	TNU 00945	0.2s	Secure Meter Ltd	26/03/2011	26/03/2011	Yadav Measurements Private Limited/07/
Main Meter -1	TNU 00946	0.2s	Secure Meter Ltd	28/03/2012	19/03/2012	Yadav Measurements Private Limited/07/
Main Meter -2	TNU 00945	0.2s	Secure Meter Ltd	28/03/2012	19/03/2012	Yadav Measurements Private Limited/07/

Saurabh Agrotech Pvt. Ltd. - 0.46 MW	SERIAL NUMBER	ACCURACY CLASS	MAKE	DATE OF CALIBRATION CERTIFICATE	DATE OF CALIBRATION	CALIBRATION ENTITY
Main Meter -1	TNU 00946	0.2s	Secure Meter Ltd	29/01/2009	29/01/2009	Rajasthan Rajya Vidhyut Prasaran Nigam Limited/07/
Main Meter -2	TNU 00945	0.2s	Secure Meter Ltd	29/01/2009	29/01/2009	Rajasthan Rajya Vidhyut Prasharan Nigam Limited/07/
Main Meter -1	TNU 00946	0.2s	Secure Meter Ltd	06/04/2010	30/03/2010	Yadav Measurements Private Limited/07/
Main Meter -2	TNU 00945	0.2s	Secure Meter Ltd	06/04/2010	30/03/2010	Yadav Measurements Private Limited/07/
Main Meter -1	TNU 00946	0.2s	Secure Meter Ltd	26/03/2011	26/03/2011	Yadav Measurements Private Limited/07/
Main Meter -2	TNU 00945	0.2s	Secure Meter Ltd	26/03/2011	26/03/2011	Yadav Measurements Private Limited/07/
Main Meter -1	TNU 00946	0.2s	Secure Meter Ltd	28/03/2012	19/03//2012	Yadav Measurements Private Limited/07/
Main Meter -2	TNU 00945	0.2s	Secure Meter Ltd	28/03/2012	19/03/2012	Yadav Measurements Private Limited/07/