Voluntary Carbon Standard 2007.1

VERIFICATION REPORT

M/s Rajesh Construction Company Limited
M/s Savla Twisters Private Limited
M/s Vijay Industries Limited
M/s Saurabh Agrotech Private Limited

Positive Climate Care 4.67 MW Bundled Grid connected Wind Power Project Activity in Jaisalmer, Rajasthan, India

VERIFICATION PERIOD:
01st April 2006 to 30th June 2009

Project No/ Rev. No.: V-3-I-01-B-0050-Ve/01

Verification Report

Name of Verification company:	**Date of issue:**
Perry Johnson Registrars CDM Inc.	2010-09-17
Report Title:	**Approved by:**
Verification report – "Positive Climate Care 4.67 MW Bundled Grid connected Wind Power Project Activity in Jaisalmer, Rajasthan, India"	Anjana Sharma
Client:	**Project Title:**
M/s Rajesh Construction Co. Ltd. M/s Savla Twisters Pvt. Ltd. M/s Vijay Industries Ltd. M/s Saurabh Agrotech Pvt. Ltd.	Monitoring report of "Positive Climate Care 4.67 MW Bundled Grid connected Wind Power Project Activity in Jaisalmer, Rajasthan, India" Monitoring period: 01st April 2006 to 30th June 2009 Version : 04 Date : 2010-08-18

Summary:

Clients, as identified above, commissioned Perry Johnson Registrars Clean Development Mechanism Inc. (PJRCDM) for verification of the project – "*Positive Climate Care 4.67 MW Bundled Grid connected Wind Power Project Activity in Jaisalmer, Rajasthan, India*". The verification involves independent review of the implementation of project as per VCS PD, conformance to applicable methodology, VCS 2007.1 requirements and guidelines, its monitoring plan and the verification of reduction in GHG emissions achieved by the project activity.

The implementation of the project activity as per design was checked. The project activity is installation and operation of four (4) WTGs of 230 kW and three (3) WTGs of 1250 kW capacity, totaling an installed capacity of 4.67 MW in Akal, Soda Mada and Themdarai villages of Jaisalmer district in the Indian state of Rajasthan, which forms part of the NEWNE grid in India.

In PJRCDM's opinion, the GHG emission reductions reported in the monitoring report version 04 dated 18th August 2010 are fairly stated. Based on the assessment, PJRCDM was able to certify that implementation of the project has resulted in reduction of GHG emissions of **21,927** tCO_2 equivalent during the period 01st April 2006 to 30th June 2009.

PJRCDM's opinion regarding the reported emission reductions for the said period is based on the review of information sought and publicly available information, where applicable.

ISO-14064 guidelines have been applied in principle to assess the key issues like accuracy, completeness and conservativeness of the information. PJRCDM's verification and certification of GHG emission reductions is limited to this information evaluation.

Issuance and utilization of certified GHG-emission reductions is beyond the scope of PJRCDM.

Report Number/ Revision Number	**Number of pages**
V-3-I-01-B-0050-Ve/01	23
Work carried out by:	**Work Reviewed by:**
Nauduri Siddhartha	Anjana Sharma

Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CL	Clarification Request
GHG	Greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
kWh	Kilo Watt Hour
NEWNE	North East West North-Eastern Grid
PD	Project Document
PJRCDM	Perry Johnson Registrars Clean Development Mechanism Inc.
PP	Project Proponent
RVPNL	Rajasthan Rajya Vidyut Prasaran Nigam Ltd.
RCCL	M/s Rajesh Construction Co. Ltd.
STPL	M/s Savla Twisters Pvt. Ltd.
SAPL	M/s Saurabh Agrotech Pvt. Ltd.
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Voluntary Carbon Standard
VIL	M/s Vijay Industries Ltd.

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1 INTRODUCTION

M/s Rajesh Construction Company Limited, M/s Savla Twisters Private Limited, M/s Vijay Industries Limited and M/s Saurabh Agrotech Private Limited, (hereinafter referred to individually or collectively as clients or project proponents (PP)) contracted Perry Johnson Registrars Clean Development Mechanism Inc. (PJRCDM) to perform the validation and verification of their project activity *"Positive Climate Care 4.67 MW Bundled Grid connected Wind Power Project Activity in Jaisalmer, Rajasthan, India"* under the Voluntary Carbon Standard (VCS) 2007.1 for the period 2006/04/01 to 2009/06/30. The validation of the project activity was concluded and a separate report dated 2009/11/16 was issued. The current report describes the verification work undertaken.

1.1 Objective

Verification under VCS is the independent *ex-post* quantification and certification of the greenhouse gas (GHG) emission reductions achieved by a project activity which has completed validation under VCS 2007.1 or registered under a VCS approved GHG program. The current project applies the methodologies and tools under CDM, which is one of the VCS approved GHG programs.

The above work is carried out through an independent assessment and a written assurance is provided on the GHG emission reductions achieved for the period specified.

1.2 Scope and Criteria

The scope of the verification covers independent objective review and *ex-post* determination of the monitored GHG emission reductions by the project activity *"Positive Climate Care 4.67 MW Bundled Grid connected Wind Power Project Activity in Jaisalmer, Rajasthan, India"*.

The specific scope of the verification work involves:

- To verify that the project activity is implemented as per the project details of the project document (PD)
- To assess whether the emissions reductions determined are in conformance with the monitoring plan of the PD and the approved methodology
- To express a conclusion whether reported data are accurate, complete, consistent, and transparent with a reasonable level of assurance and free of omission or material error, based on the review of the reported data and emission reduction calculations.

The project is assessed against the verification requirements of VCS 2007.1 standard including the criteria that the emission reductions are real, measurable, transparent and conservative. The approach adopted by PJRCDM verification team is risk-based, drawing on an understanding of the risks associated with reporting of GHG emissions data and the controls in place to mitigate these.

The work carried out by PJRCDM is free from any conflict of interest.

Request for issuance of Voluntary Carbon Units (VCUs), verified and certified by PJRCDM, shall be made by the project proponent to the VCS registry in accordance with the most recent version of the "*VCS Guidance Document: VCS Project Registration and VCU Issuance process*". In view of the above, PJRCDM's responsibility is limited only to verification and certification of the GHG emission reductions achieved during the specified period.

1.3 VCS project Description

The project activity is generation of electricity by three wind turbine generators (WTGs) of 1250 kW and four WTGs of 230 kW capacity, totaling an installed capacity of 4.67 MW in different villages of Jaisalmer district in the Indian state of Rajasthan. The generated electricity is being both exported to the state utility of Rajasthan Rajya Vidyut Prasaran Nigam Limited (RVPNL), and is as well used to wheel the energy to the PP's industries in the state. RVPNL forms part of the North East West North-East (NEWNE) grid in India.

The WTGs are S66 (1250 kW) and E-30 (300 kW) models by M/s Enercon (India) Ltd. These WTGs were commissioned between 2003/03/29 and 2004/04/30.

The generated electricity is replacing equivalent quantity of electricity from being produced by the grid connected, largely fossil fuel based, power plants and according to the future expansion plans of the grid as mandated by the Government of India.

The project location details are as follows:

Table 1: Project Details

№	Project Promoter	Location	WEG Capacity (MW) / Location number	Latitude & Longitude	Date of Commissioning
1.	Rajesh Construction Co. Ltd.	Village – Akal District – Jaisalmer State - Rajasthan	1.25 (Suzlon)/ J-137	N26° 46' 37.5" & E71° 05' 33.5"	October 31st, 2003
2.			1.25 (Suzlon)/ J-132	N26° 46' 52.0" & E71° 05' 41.5"	
3.	Savla Twisters Pvt. Ltd	Village – Soda-Mada District – Jaisalmer State - Rajasthan	1.25 (Suzlon)/ J-224	N26° 40' 55.1" & E70° 52' 49.6"	April 30th, 2004
4.	Vijay Industries Ltd.	Village – Themdarai District – Jaisalmer State - Rajasthan	0.23 (Enercon)/ VIKL-01	N26° 45' 24.5" & E70° 53' 25.7"	March 29th, 2003
5.			0.23 (Enercon)/ VIKL-02	N26° 45' 30.5" & E70° 53' 25.8"	
6.	Saurabh Agrotech Pvt. Ltd.	Village – Themdarai District – Jaisalmer State – Rajasthan	0.23 (Enercon)/ SAPL-01	N26° 45' 48.5" & E70° 53' 27.1"	March 29th, 2003
7.			0.23 (Enercon)/ SAPL-02	N26° 45' 52.4" & E70° 53' 25.4"	

The project qualifies the start date requirements under VCS 2007.1 as the first WTG was commissioned later than January 2002. Further, in line with VCS 2007.1 requirements, the monitoring period start date has been considered as 2006/04/01, after the requirement of 2006/03/28.

By implementing the project activity, the following GHG sources of emissions are reduced/ avoided:

Table 2: GHG Gases avoided by project activity

Project Equipment - Purpose	Baseline	Baseline GHG emission source reduced/ avoided
Wind Turbine Generators – generation of electricity by renewable means and exporting to NEWNE Regional grid	Generation of electricity by fossil fuel dominated grid connected power plants	CO_2 emissions from fossil fuels and other fuel fired grid connected

1.4 Level of assurance

In line with VCS 2007.1 requirements and as per ISO 14064-3:2006 paragraph A.2.3.2, a ***"reasonable level of assurance"*** is defined for the verification of the project.

This implies that, based on the process and procedures conducted, PJRCDM **confirms** that the GHG assertion in the monitoring report

- *is materially correct and is a fair representation of the GHG data and information, and*
- *is prepared in accordance with VCS requirements, the PD and the approved methodology for information pertaining to GHG quantification, monitoring and reporting.*

The verification work is carried out as per this requirement and details are presented in the Verification statement in section 2 below.

2 METHODOLOGY

2.1 General Approach

The project activity is operation of three WTGs of 1250 kW and four WTGs of 230 kW capacities in the state of Rajasthan, India. The project activity applies approved baseline and monitoring methodology AMS-I.D (version 14) categorized under sectoral scope 01 'Energy industries (renewable - / non-renewable sources)'.

For verification of emission reductions, PJRCDM's approach involves broadly three steps:

1. Completeness check and desktop review of the monitoring report
2. Onsite inspection and issuance of findings from the audit
3. Resolution of the findings and preparation of the verification report

The following team members from PJRCDM were involved in these steps:

Table 3: Verification Team

Name	Role	Areas covered
Nauduri Siddhartha	Verifier	Completeness check of monitoring report, desktop review, site visit, issuance and closure of findings, report preparation
Anjana Sharma	Technical Reviewer	Independent review of the verification assignment.

2.2 Means of Verification

2.2.1 Review of Project Documentation

On receipt of the monitoring report from the client, the completeness of information made available as per VCS2007.1 standard requirements was reviewed. A desktop review was further carried out to assess the following:

- the validated VCS 2007.1 PD with the monitoring plan
- the emission reduction calculation method used in the applied methodology and the PD
- the monitoring report, including frequency of monitoring and the calculation of emission reductions for the period
- the documented operation and maintenance manual furnished by the project participant (where applicable)
- other external documents like grid emission factor, IPCC emission factor, etc. applied

A complete list of all documents reviewed is attached in Appendix I of this report.

2.2.2 Onsite Inspections

PJRCDM conducted a site visit on 2009/06/04 and follow up interviews and desk meetings with project participants. During these meetings, PJRCDM verified the actual operation of the project as described in the PD and as validated in the VCS VR; checked the JMR sheets, controller data at Central Monitoring Stations and verified them against the invoices of payment for energy delivered by the PP to RVPNL; the calibration records available with the PP; and discussed the issues identified during

desk review of submitted documents and observation on site visit. Two PPs, however, are wheeling the energy generated to their industrial units in Rajasthan.

The following table lists the personnel interviewed and issues discussed during the site visit:

Table 4: Personnel Interviewed

Name / Designation / Company	Interviewed on
Mr. Gaurav Jain Assistant Manager - Customer Relations Suzlon (O&M contractor)	Project technical details, monitoring system, calibration practice and frequency
Mr. Pradeep Singh Site in-charge Enercon India (O&M contractor)	Project technical details, monitoring system, calibration practice and frequency
Ms. Meenakshi Jain CDM Consultant Positive Climate Care	Monitoring Report, Emission reduction calculations

2.2.3 Review of Monitoring Results and Correct Application of Monitoring Methodology

Based on the site inspection and review of records including the monitoring plan and other documentation submitted, a list of non conformities Corrective Action Requests (CARs) and Clarification Requests (CLs) were raised. The non conformities, *inter-alia*, were related to lack of adherence to the VCS 2007.1 requirements, non-conformance to the monitoring plan of as defined in the PD or where evidence provided was found insufficient to prove conformity, mistakes in applying data/ assumptions and in calculation of emission reductions.

If information made available was insufficient to transparently arrive at the stated conclusion, a Clarification request (CL) was raised and communicated to the project proponent.

Observations may also be raised which are for the benefit of future verification period. These, however, have no impact upon the completion of the current verification activity.

On receipt of response from the project developer, the adequacy with compliance with VCS and CDM requirements was checked along with a revised monitoring report. Closure of comments raised occurred only when the response provided and correction made fully complied with the relevant requirements.

The list of CARs/ CLs raised and the response provided and reasons for closure are provided Appendix-1.

2.2.4 Determinations of the reductions in GHG Emissions

As per the applicable methodology, AMS-I.D., version 14, the emission reductions achievable by the project activity are calculated as a difference of baseline emissions

(BE_y) project emissions (PE_y) and emissions due to leakage (L_y) determined as follows.

Baseline emissions: The baseline emissions are determined as a multiple of net electricity generated and supplied to the grid by the renewable energy technology (EG_y in MWh), and an electricity grid emission factor calculated as per CDM EB guidance.

As per the PD, the emission factor has been fixed *ex-ante* and for the current verification period, PJRCDM was able to verify the VER calculations based on the grid emission factor of 0.906 tCO_2/MWh.

Project emissions: As the project activity is wind power based power generation, the methodology does not require estimation of project emissions and hence they have been considered as zero.

Leakage: Similarly, no leakage has to be considered for the proposed project activity.

Emission reductions: $ER_y = BE_y - PE_y - L_y = BE_y$

During the current monitoring period, i.e. from 2006/04/01 to 2009/06/30, the project activity has delivered approximately 24,179 MWh of net electricity to the NEWNE grid. This was checked against the Joint Meter Readings, the source of data as confirmed against the validated monitoring plan in VCS PD. The net reduction in GHG emissions achieved by the project activity during the said monitoring period is equivalent to **21,927 tCO_2e**.

The above value of GHG emission reductions is based on completely monitored data, transparently presented, accurately measured and calculated, conservatively estimated and independently verified by PJRCDM.

2.2.5 Review of Additional Data from other Sources if appropriate

No pending issues that were to be considered during verification were identified in the validation report.

The other source of information was the CEA Database Version 04, available from the website, from which the emission factor for the grid was determined.

2.3 Internal Quality Control

On completion of the assessment by the GHG assessment team, the complete verification package including the verification report, monitoring report and supporting documents was sent to the Technical Reviewer. In this stage, the Technical Reviewer independently assessed the project with the VCS requirements before accepting/ rejecting the recommendation from the GHG assessment team.

3 VERIFICATION FINDINGS

3.1 Remaining issues, including any material discrepancy, from previous validation

No pending issues were identified from the discussion, findings and conclusions drawn from the VCS 2007.1 Validation Report (version 01) issued dated 2009/11/16 against the PD Version 02 dated 2009/11/10.

3.2 Project Implementation

The project activity involves the installation and operation of seven WTGs in different villages of Rajasthan, India by the clients. These WTGs are manufactured by M/s Suzlon Energy Ltd. and M/s Enercon (India) Ltd. and are of varying capacity.

The implementation of the project activity as described in the PD was checked against supportive documents presented. PJRCDM was able to verify that the there was no change in project design compared to the design presented.

3.3 Completeness of Monitoring

The GHG emission reductions are calculated based on the net electricity exported by the project activity to the grid. This includes the component wheeled to the industry of few clients, as essentially these WTGs are connected to the grid system and exporting energy to the national grid. Further the energy drawn by the respective industries is again only from the grid and hence wheeling is treated on par with export to grid. The clients are monitoring the complete data and is available with them in the form of JMR sheets.

As per the practice on site, multiple WTGs are connected to a single interface with the grid and the net energy delivered by each WTG is calculated. The energy measuring devices are the 0.2 accuracy class tri-vector meters (energy meters). The WTGs are connected to different feeders, as tabulated below.

Table 5: WTGs, HT Sc. and Energy Meter numbers

WTG Owner	HT. Sc. №	Capacity (MW)	Feeder	Main Energy Meter №	Backup Energy Meter №
M/s Rajesh Construction Co. Ltd.	J-137	1.25	SEL-06	RJU00336	GJU00659
	J-132	1.25			
M/s Savla Twisters Pvt. Ltd	J-224	1.25	SEL-07	RJB00102	RJB00257
M/s Vijay Industries Ltd.	VIKL-01	0.23	Temderai-Amarsagar GSS	TNU00946	ABB00691
	VIKL-01	0.23		TNU00945	RJB00052
Saurabh Agrotech Pvt. Ltd.	SAPL-01	0.23	Temderai-Amarsagar GSS	TNU00946	ABB00691
	SAPL-02	0.23		TNU00945	RJB00052

The meter readings are the primary source for estimating the net energy delivered by the project activity to the grid. The JMR sheets of all the monthly readings for all the WTGs were checked for the energy delivered.

For the WTGs belonging to M/s Rajesh Construction Co. Ltd., the main energy meter was changed during the month of February 2008. The clients provided two separate JMR readings, certified by relevant authorities, which indicated that there was no break in the energy measurement.

In the case of J-224 of M/s Savla Twisters Pvt. Ltd., there were yearly changes in the energy meters installed as the transformers to which the WTGs were connected to. The clients informed that each year RVPNL re-distributed the load on each transformer depending on the new WTGs which get commissioned and this change is effected only during year end. Since the PP submitted continuous JMR readings for each such change, and the energy delivered calculated was lesser than the controller reading of each WTG, the explanation was accepted by the verification team.

The following table summarizes the net electricity delivered by the project proponents to the NEWNE grid:

Rajesh Construction Co.		
	Net Export	**ERs**
	kWh	tCO_2e
2006	3161090	2864
2007	3725469	3376
2008	4193388	3800
2009	1999193	1811
	13079140	**11851**

Savla Twisters Pvt. Ltd.		
	Net Export	**ERs**
	kWh	tCO_2e
2006	1389271	1258
2007	1684363	1526
2008	1868973	1693
2009	906225	821
	5848833	**5298**

Vijay Industries Ltd		
	Net Export	**ERs**
	kWh	tCO_2e
2006	673263	610
2007	797555	722
2008	826485	748
2009	380735	345
	2678038	**2425**

Saurabh Agrotech Pvt. Ltd.		
	Net Export	**ERs**
	kWh	tCO_2e
2006	659525	597
2007	777190	704
2008	806587	730
2009	355437	322
	2598738	**2353**

Total		
	Net Export	**ERs**
	kWh	tCO_2e
2006	5883149	5329
2007	6984578	6328
2008	7695433	6971
2009	3641590	3299
	24204749	**21927**

The accuracy of the above data was checked by PJRCDM and the analysis presented below.

3.4 Accuracy of Emission Reduction Calculations

Net electricity supplied to the grid: The energy meter readings are noted daily and compared to controller data to check for accuracy in measurement. Monthly joint meter readings are taken and authorized by the representatives of clients and RVPNL jointly which would then be used to estimate the quantity of energy delivered by the WTGs to the grid.

The JMR sheets are the source for the values used to determine the net electricity delivered by the project activity, which is in line with the requirement as provided in the PD.

The transposition errors in the spreadsheet submitted were intimated and corrected by the client. The formulae and conversions were correctly applied.

Metering accuracy: The accuracy of measurement of electricity delivered is determined by the equipment accuracy and the frequency of its calibration. The calibration frequency was defined as once in year.

The energy meters are installed at the sub-stations to which the WTGs of the project activity and others as well are connected. Their calibration is not under the purview of the clients. However, for the period in which no calibration was carried out, the

clients have applied the correction factor as per UNFCCC guidance on calibration during monitoring given in Version 01 of "Guidelines for Assessing Compliance with the Calibration Frequency Requirements."

The resulting net energy delivered, and consequently emission reductions, are therefore conservative.

Value of grid emission factor: PJRCDM was able to confirm that this parameter was fixed *ex-ante* during the validation of the project and the same was used for ER calculations for the current monitoring period (MR Version 04 dated 2010/08/18). The parameter was derived from officially published latest database* from Central Electricity Authority of India, a subsidiary of Ministry of Power, Government of India, which is the authentic source of such information, at the time of validation.

The emission factor for the NEWNE grid to which the project activity exports power to is determined as 0.906 tCO_2/MWh.

3.5 Quality of Evidence to Determine Emission Reductions

The source of net energy generation, as reported in the PD is the JMR sheets, and the same were used by the client to calculate EG_y. PJRCDM was able to check and verify the values. The annual value of the energy exported was the summation of these monthly readings. The JMR sheets are deemed to be the most appropriate source of data for net energy exported, as the values denoted were jointly measured by the representatives of the PP and RVPNL, duly signed and acknowledged by both parties.

The emission factor for the NEWNE grid to which the project activity exports power to is determined as 0.906 tCO_2/MWh, a value fixed *ex-ante* during validation of the project activity and sourced from the official source for grid emission factors in India.

These practices meet the requirements of the applied methodology and approved monitoring plan as registered in the VCS PD.

3.6 Management and Operational System

The clients 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.

* http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm

4 VERIFICATION CONCLUSION AND CERTIFICATION STATEMENT

Perry Johnson Registrars CDM Inc. (PJRCDM) has carried out verification of the emission reductions achieved by the project "Positive Climate Care 4.67 MW Bundled Grid connected Wind Power Project Activity in Jaisalmer, Rajasthan, India" against the guidelines of VCS 2007.1. The project activity is generation of electricity by seven (7) Wind Turbine Generators (WTGs) of 230 kW and 1250 kW capacity, totaling an installed capacity of 4.67 MW in Akal, Soda Mada and Themdarai villages of Jaisalmer district in the Indian state of Rajasthan. Verification was sought for the emission reductions achieved by the project within the period 2006/04/01 and 2009/06/30 under VCS 2007.1. The project has applied the version 14 of the small scale CDM methodology AMS-I.D "Grid connected renewable electricity generation" and the emission reductions are as reported in the version 4 of the monitoring report, dated 2010/08/18.

PJRCDM's approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate them. The assessment was based on review of supporting evidences and information provided, including other explanations where necessary to enable PJRCDM to provide ***reasonable assurance*** *that the reported amount of GHG emission reductions for the specified period is materially correct and fairly stated.*

Certification statement:

PJRCDM confirms that the project activity has been implemented as per the VCS registered PD and that the emission reductions presented in the monitoring report version 04 dated 2010/08/18 are correctly determined as per the VCS 2007.1 standard and AMS-I.D methodology, version 14. Based on the above information, PJRCDM confirms the following:

Name of the project	*Positive Climate Care 4.67 MW Bundled Grid connected Wind Power Project Activity in Jaisalmer, Rajasthan, India*
VCS 2007.1 PD	*Version 02 dated 2009/11/10*
VCS 2007.1 Validation Report	*Version 01 dated 2009/11/16*
Methodology	*AMS-I.D Version 14*
Monitoring Report	*Version 04 dated 2010/08/18*
Reporting period	*2006/04/01 to 2009/06/30*

Verified emission in the above reporting period

Project emissions	*: 0*	*tCO_2 equivalents*
Baseline emissions	*:21,927*	*tCO_2 equivalents*
Emission reductions	*:21,927*	*tCO_2 equivalents*

Year-wise emission reductions

01st April 2006 to 31st December 2006	*: 5,329*	*tCO_2 equivalents*
01st January 2007 to 31st December 2007	*: 6,328*	*tCO_2 equivalents*
01st January 2008 to 31st December 2008	*: 6,971*	*tCO_2 equivalents*
01st January 2009 to 30th June 2009	*: 3,299*	*tCO_2 equivalents*

Project Manager
PJRCDM

Site Program Manager
PJRCDM

APPENDIX I: DOCUMENTS REVIEWED

Sl. No.	Document reference
[01]	Monitoring report: "Positive Climate Care 4.67 MW Bundled Grid connected Wind Power Project Activity in Jaisalmer, Rajasthan, India", Version 03, dated 2010/06/10, and all previous versions
[02]	Emission reduction spreadsheet, Version 03, dated 2010/05/31, and all previous versions
[03]	Project Document: "Positive Climate Care 4.67 MW Bundled Grid connected Wind Power Project Activity in Jaisalmer, Rajasthan, India" Version 02, dated 2009/11/10
[04]	VCS Validation Report: "Positive Climate Care 4.67 MW Bundled Grid connected Wind Power Project Activity in Jaisalmer, Rajasthan, India" Version 01, dated 2009/11/16
[05]	Approved Small-scale Methodology – Indicative baseline and monitoring methodology AMS ID, version 14: "Grid connected renewable electricity generation"
[06]	CDM Executive Board: Validation and Verification Manual, version 01.1
[07]	Calibration records for the energy meters used to measure the energy delivered by the WTGs for the period 2006/04/09 to 2009/11/09
[08]	Joint meter readings for all the months between the period, for all WTGs for the period 2006/04/09 to 2009/11/09
[09]	Version 01 of "Guidelines for Assessing Compliance with the Calibration Frequency Requirements", EB 52, Annex 60

APPENDIX II : RESOLUTION OF CARs AND CLs

Resolution of Corrective Action and Clarification Requests: - "Positive Climate Care 4.67 MW Bundled Grid connected Wind Power Project Activity in Jaisalmer, Rajasthan, India"

Draft report clarification requests and corrective action requests by verification team	Reference	Summary of project owner response	Verification team conclusion
CL 1 The date of the monitoring report is not clearly stated as per the submission of the monitoring report.	Cover page, First page	The date of the monitoring report has been revised as per the submission date.	Necessary corrections have been made to the MR, hence issue is resolved, and **CL is CLOSED**.
CL 2 Controller meter readings (used for billing) for all the months to be furnished and formula for apportioning of power to be clearly discussed with example.	4.0, Annex 1	Controller meter readings, Break up sheets and invoices for each month for each project proponent has been provided to verifier and formula for apportioning of power with example of Rajesh Constructions and Saurabh agrotech has been mentioned in revised version of monitoring report.	Necessary documents provided, hence **CL is CLOSED**.
CL 3 Unique identification number is not provided for the machines in the monitoring report.	2.1	Unique Identification number (Location number) has been provided in revised version of the report.	Unique identification numbers provided in the revised MR, hence **CL is CLOSED**.
CL 4 As per the validated PDD, some of the machines in the bundle are wheeling to the grid. Clarification is sought whether the	2.1, 3.1 and Annex 1	As per the Annex 12, EB 35 **"Tool to calculate the emission factor for an electricity system"** the net electricity	During discussions with representatives of the State's electricity board, it was concluded that the levy is charged for

Draft report clarification requests and corrective action requests by verification team	Reference	Summary of project owner response	Verification team conclusion
wheeling charges are deducted while determining the net generation. Specify clearly the machines which are wheeling in the bundle.		generation refers to the difference between the total quantity of electricity generated by the power plant and the auxiliary electricity consumption of the power plant. Therefore, Net electricity generation from the WTG will be Export from the WTG – Import by the WTG and as recorded by the main meter of RVPNL. Therefore, wheeling charges has not been deducted while determining the net generation. The project proponents Vijay Industries and Saurabh Agrotech are wheeling the electricity generated from the wind mills to their respective industrial units and the same has been mentioned in revised report.	utilizing the grid's facility and the deduction in units is only a measure of facilitation. Further as the total energy delivered by the project activity to the grid is given in the JMR, this was accepted and issue is resolved and **CL is CLOSED**.
CL 5 Vijay Industries and Saurabh Agrotech machines: joint meter reading report is not furnished for April and May 2009	Annex 1	Joint meter reading reports for the month of April and May 2009 has been furnished to verifier for Vijay Industries and Saurabh Agrotech.	Corresponding documents were submitted and reviewed and hence, **CL is CLOSED**.
CL 6 Rajesh Construction 2.5 MW: From the generation records it is found for there is wide variation in net power export for August 2006/2007 and October 2006/ 2007. Substantiation is sought in the monitoring	Annex 1	In the month of August 2006 and October 2007, wind density and wind speed was very low, given that electricity generation is dependent on wind density and speed, therefore net power export was less in	As power generation is dependent on air speed and density; the generation by the WTG for same months in other years are in range, and the overall PLF has been lesser than estimated the verification team

Draft report clarification requests and corrective action requests by verification team	Reference	Summary of project owner response	Verification team conclusion
report along with evidence on the wide variation in generation for the same months of different years.		respective months over August 2007 and October 2006.	accepted the explanation and **CLOSED** the **CL**.
CL 7 For full-year generation where applicable, the actual plant load factor achieved to be stated clearly for all machines.	Annex 1	The plant load factor has been mentioned in revised version of monitoring report.	Necessary comparison included in the MR and it has been lesser than estimated, hence **CL is CLOSED**.
CL 8 Individual proponent-wise annual emission reductions to be stated	4.4	Individual proponent-wise annual emission reductions have been stated in revised report.	Individual proponent-wise annual emission reductions have been sated in the revised MR, hence **CL is CLOSED**.
CL 9 Rajesh Constructions: Two main meter (backup meter converted as main meter) has been connected for the month Feb 08 and generation included from both the meters. Please clarify. Savla Twisters: Two or three main meters		Rajesh Constructions: In the month of February 2008, the existing main meter (Sr. No. RJU 00336) was replaced by a new meter (Sr. No. RJU02415). The removed meter (Sr. No. RJU 00336) was then replaced for the existing backup meter (Sr. No. GJU 00659). It should be noted that the meter (Sr. No. RJU 00336) was installed as a **backup meter** after its annual testing. These replacements were made on 16th day of February, 2008. Therefore, the metering remained uninterupted. As a result, the total generation for the discussed month includes generation from two meters, i.e. Meter No.	Rajesh Construction: The verification team observes that the main meter was replaced immediately, and separate JMR sheets presented for the month indicating that energy measurement was continuous, hence issue is resolved.

Draft report clarification requests and corrective action requests by verification team	Reference	Summary of project owner response	Verification team conclusion
has been connected for few months (eg: May 07) and generation included from both the meters. Please clarify.		RJU 00336 (from Feb. 1 to Feb. 16) and Meter No. RJU02415 (from rest of the Feb. 16 through end of the month). Savla Twisters: Each transformer has a capacity of 75 MVA. Number of transformers used for feeding energy through different feeders keeps on changing depending on the energy load at sub-station. Therefore, two or three main meters are connected at substation for few months, and since the metering is continuous, the total generation of the respective month includes generation read by two/three meters.	Savla Twisters: The change of transformers, and occurred only at the start of each year. Consequently there was no break in measurement of energy, and the JMR readings cover the entire period. Hence, the explanation was accepted by the Verification Team, **CL is CLOSED**.
CAR 1 Rajesh Construction J- 137 and J-132: export and import data are incorrect for the month of April 2009. For February 2007, break-up sheet is not clear.	Annex 1	Rounding of decimal point was not considered in invoice generated for the month of April 2009, data has been corrected as per break up sheet in revised report. Clearly visible break up sheet for February 2007 has been provided to verifier.	Necessary corrections made to the MR and emission reductions sheet and break-up sheet provided, **CAR is CLOSED**.
CAR 2 Comparison of actual achieved emission reductions compared to estimated emission reductions to be provided.	MR	A comparison sheet for estimated v/s actual plant load factor is included in the revised monitoring report. Rajasthan state experiences a low plant load factor. Any	Necessary comparison included in the MR which indicates that the WTGs have achieved a PLF lesser than estimated, hence **CAR is CLOSED**.

Draft report clarification requests and corrective action requests by verification team	Reference	Summary of project owner response	Verification team conclusion
		fluctuation in the plant load factor would affect the electricity generation. In the present case, it is seen through much lower actual emission reductions than what were estimated.	

APPENDIX III: LIST OF PARAMETERS

List of parameters covered during the verification period under consideration *(mention the verification period)* and details regarding the monitoring and reporting practices.

S.No.	Monitoring and reporting practice/Parameter	Parameter 1
1.	Monitoring and reporting frequency as verified during the site visit.	Electricity supplied by the WTGs in the project activity to RVPNL grid, EG_y, is monitored daily, measured and reported monthly
2.	Monitoring equipment verified during the site visit.	Tri-vector energy meters Accuracy of 0.2 class
3	Calibration frequency and other details verified during the site visit.	Calibration frequency as defined in PD: once in a year As consolidated in Table 6 of the Verification Report. The reference standard meters are of 0.1 accuracy class. However, since for subsequent years there was only testing carried out and not calibration, the PP has deducted maximum permissible error applicable for the energy meters from net export and therefore, the energy delivered values are more conservative, and consequently the emission reductions.
4.	The above parameters are in line with the MP agreed in the PD.	No but net electricity delivered to grid corrected with maximum error percentage applicable for the energy meters, hence acceptable.
5	The above parameters are in line with the monitoring methodology applied for the proposed project.	No but net electricity delivered to grid corrected with maximum error percentage applicable for the energy meters, hence acceptable.
6	Calibration entity and if the same is in line with the monitoring plan as agreed in the registered PDD.	Rajasthan Rajya Vidhyut Prasaran Nigam Ltd., Protection Wing; no specific entity was identified during Validation