



Voluntary Carbon Standard 2007.1

VERIFICATION REPORT

Wind Power Project at Anthiyur, Tamil Nadu

**VERIFICATION PERIOD:
1 April 2006 to 7 February 2010**

Project No/ Rev. No.: V-2-I-01-S-0115 -Ve /01

Verification Report

Name of Verification company:	Date of issue:
Perry Johnson Registrars CDM Inc.	2011/03/03
Report Title:	Approved by:
Verification report – “Wind Power Project at Anthiyur, Tamil Nadu”.	Mathsy Kutty
Client:	Project Title:
M/s. Nuziveedu Seeds Limited	Monitoring report of “Wind Power Project at Anthiyur, Tamil Nadu” Version : 03 Date : 16 December 2010
Summary:	
M/s.Nuziveedu Seeds Limited has commissioned Perry Johnson Registrars Clean Development Mechanism Inc. (PJRCMD) to perform verification of the project – “Wind Power Project at Anthiyur, Tamil Nadu” under Voluntary Carbon Standard (VCS) 2007.1. The verification involves independent review of the implementation of project as per VCS project description (PD) and its monitoring plan. The project activity involves installation and operation of wind turbine generators (WTGs) of 14.85 MW capacity in the Anthiyur Village , Udumalpet and Pollachi Talukas of Coimbatore district in state of Tamil Nadu, India. 9 WTGs under the bundle were commissioned during the year 2005 and the power generated is exported to the Southern regional grid of India. Based on the assessment of the GHG emission reductions reported in the initial version of the monitoring report version 01 dated 27 July 2010, PJRCMD had requested responses from the project proponent through the means of Clarification Requests (CLs), Corrective Action Requests (CARs) and Forward Action Requests (FARs) issued in the draft verification report. In our opinion, the GHG emission reductions reported in the monitoring report final version 03, dated 16 December 2010 are fairly stated. Based on the assessment, PJRCMD is able to certify that the implementation of the project has resulted in GHG emission reduction of 144528 tCO₂ equivalent during the period 1 April 2006 to 7 February 2010. PJRCMD’s opinion regarding the reported emission reductions for the given monitoring period, is based on the information sought and also reviews of 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. PJRCMD’s verification/certification of GHG emissions is limited to this information evaluation. Issuance and utilization of certified GHG-emission reductions is beyond the scope of PJRCMD.	
Report Number/ Revision Number	Number of pages
V-2-I-01-S-0115 -Ve/01	22
Work carried out by:	Work Reviewed by:
Ajay Verma	Mathsy Kutty



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
NSL	Nuziveedu Seeds Limited
PD	Project Description
PJRCDM	Perry Johnson Registrars Clean Development Mechanism Inc.
PP	Project Proponent
SG	Southern Grid
TNEB	Tamil Nadu Electricity Board
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Voluntary Carbon Standard

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1 INTRODUCTION

M/s Nuziveedu Seeds Limited has commissioned Perry Johnson Registrars Clean Development Mechanism Inc. (PJRCDM) to perform verification of the project: “Wind Power Project at Anthiyur, Tamil Nadu” under Voluntary Carbon Standard (VCS) 2007.1 for the period 1 April 2006 to 7 February 2010. The report describes the verification work undertaken. The validation of the project activity against the VCS 2007.1 requirements was completed on 15 November 2009 by the TÜV NORD CERT GmbH.

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 validated under a VCS approved GHG program.

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 “Wind Power Project at Anthiyur, Tamil Nadu”.

The specific scope of the verification work involves:

To verify that the project activity is implemented as per the project details of the validated project design document (PDD) or the VCS PD

To assess whether the emissions reductions determined are in conformance with the monitoring plan of the VCS 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 involves installation and operation of wind turbine generators (WTGs) of 14.85 MW in the Anthiyur Village, Udumalpet and Pollachi Talukas of Coimbatore district in state of Tamil Nadu, India. The project activity comprises of 9 WTGs owned by NSL in village of Anthiyur in Coimbatore districts of Tamil Nadu, India.

PP has chosen verification monitoring period from 1 April, 2006, as the electricity generation is recorded monthly by the TNEB in the monthly statement.

The WTGs are manufacture by M/s Vestas India Pvt. Ltd..

Location : Village of Anthiyur , Udumalpet and Pollachi
Talukas of Coimbatore district in state of Tamil Nadu, India.

Title of the PDD : Wind Power Project at Anthiyur, Tamil Nadu

Methodology used : AMS I D, version 14

VCS Crediting period : 1 April 2006 to 31 March 2016

Monitoring period under VCS : 1 April 2006 to 7 February 2010

Table 1: Project Details

S. NO	Location Name	Taluk	District	State	Geographical Coordinates		HTSC No.	Date of Commissioning
1	NSL 1	Pollachi	Coimbatore	Tamil Nadu	N10°36'49.6"	E77°09'15.3"	751	31 March 2005
2	NSL 2	Pollachi			N10°37'21.4"	E77°09'30.0"	752	31 March 2005
3	NSL 3	Pollachi			N10°36'48.2"	E77°09'51.0"	754	31 March 2005
4	NSL 4	Pollachi			N10°37'01.2"	E77°09'45.6"	788	29 April 2005
5	NSL 5	Pollachi			N10°37'15.5"	E77°09'52.9"	753	31 March 2005
6	NSL 6	Pollachi			N10°36'39.6"	E77°10'07.7"	808	17 May 2005
7	NSL 7	Udumalpet			N10°37'11.7"	E77°11'25.2"	728	30 March 2005
8	NSL 8	Udumalpet			N10°37'27.5"	E77°11'21.0"	755	31 March 2005
9	NSL 9	Udumalpet			N10°38'33.8"	E77°11'02.9"	690	26 March 2005

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 validated CDM PDD 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 applies approved baseline and monitoring methodology AMS-I.D (version 14) categorised 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 :

Name	Role	Areas covered
Ajay Verma	GHG Auditor/Project Manager	Completeness check of monitoring report, desktop review, site visit, issuance and closure of findings, final verification report preparation
Mathsy Kutty	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:

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- the validated VCS PD with the monitoring plan
- the emission reduction calculation method used in the applied methodology and the VCS 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

An onsite visit was carried out by PJRCDM in the month of 14 October 2010. The actual operation of the project as described in the PD, the JMR sheets were reviewed and discussed during the site visit and issues identified in the desktop review of submitted documents were discussed.

List of personnel interviewed and issues discussed during the site visit is as provided below:

Table 2: Personnel Interviewed

Name / Designation / Company	Interviewed on
Mr. A Rajnikant, NSL. Manager-Power Division Ms. T Divya Vaishnavi Ernst & Young Private Limited	▪ Determination of net electricity generation ▪ Joint meter reading exercises ▪ Monitoring system ▪ Invoices for electricity export ▪ Calibration practice

During the site visit, PJRCDM verified the actual operation of the project as described in the PD. The system of controller energy meters and joint energy meters used for monitoring the sale of electricity sale to grid were examined. The monthly records for joint meter readings were reviewed.

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, a list of non conformities; Corrective Action Requests (CAR) were raised. The non conformities could be related to lack of adherence to the VCS 2007.1 requirement, non-conformance to the monitoring plan of as defined in the VCS validated PD or where evidence provided is found insufficient to prove conformity. They could also be mistakes in applying data/ assumptions and in calculation of emission reductions.

If information made available is insufficient to transparently arrive at the stated conclusion, a Clarification request (CL) is 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 requirements is checked along with a revised monitoring report. Closure of comments raised occurs only if the response provided and correction made fully complies with the stated requirements of the methodology applied.

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 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 Southern grid emission factor calculated as per CDM EB guidance.

As per the VCS validated PD, the Southern emission factor has been fixed ex-ante. For the current verification period, PJRCMD was able to verify the VER calculations based on the Southern regional grid emission factor of 0.9269 tCO₂/MWh.

Project emissions: PJRCMD has not found any emission sources in project boundary. So there are no project emissions applicable and hence it has been considered as zero.

Leakage: There are no anthropogenic emissions identified by sources outside the project boundary due to the project activity. Furthermore, the equipments (WTGs) used by the project activity are newly procured as per validated VCS PD and hence not transferred from another project. Hence the leakage has been considered as zero for the VCS validated project activity.

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

PP has chosen the current monitoring period from 1 April 2006 to 7 February 2010. During project site visit and calibration certificates [7] review, PJRCMD has found that all the meter has been working within maximum accuracy. PP has applied maximum accuracy (+/- 0.5) of the installed meter as correction factor for the period for which calibration not available, which is conservative and also inline with EB guidance “Guidelines for the assessing compliance with the calibration frequency requirements, EB 52, Annex 60. The project activity has delivered 144527.819 MWh of net electricity to the grid. PJRCMD team was able to verify the generation data presented in the excel worksheets, which were further cross checked against the JMR sheets and invoices. The invoices serve as a credible source for cross verification, since the same is used for the payment by the TNEB to project proponent. Based on

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this, the net reduction in GHG emissions achieved by the project activity during the said monitoring period is equivalent to **144528 tCO₂e**.

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 PJRCMD.

2.2.5 Review of Additional Data from other Sources if appropriate

The validation report of the VCS validated project issued by the TÜV NORD CERT GmbH, dated 15 November 2009, the VCS validated PD, version 02 dated 27 October 2009 were reviewed for any pending issues to be considered during verification.

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 is sent to the Technical Reviewer. In this stage, the Technical Reviewer independently assesses 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 current VCS Validation Report (version 01) issued by validating agency dated 15 November 2009.

3.2 Project Implementation

The project activity involves installation and operation of wind turbine generators (WTGs) of 14.85 MW in the Anthiyur Village, Udumalpet and Pollachi Talukas of Coimbatore district in state of Tamil Nadu, India.

The project activity involves the installation and operation of nine (9) Wind Turbine Generators in the Anthiyur Village, Udumalpet and Pollachi Talukas of Coimbatore district in state of Tamil Nadu, India by the NSL. These WTGs are all manufactured by M/s Vestas India Private Limited and are of 1.65 MW capacities.

The implementation of the project activity was as described in the VCS validated PD, checked against supportive documents presented. PJRCMD was able to verify that there was no change in project design compared to the design presented in the VCS validated PD, version 02 dated 27 October 2009.

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 is measured by the 0.5% accuracy class tri-vector

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meters (energy meters) installed at located at the sub-station. The main meter readings are the primary source while the check meter is used to determine the accuracy of meter readings, and the check meter readings would be used in the eventuality of main meter failing, if and when identified during yearly checks.

The JMR sheets of all the monthly readings for all the WTGs were checked and it has recorded in presence of TNEB representative and PP.

Complete data of electricity supply to the grid was made available for the entire verification period (1 April 2006 to 7 February 2010) which was verified by PJRCMD.

3.4 Accuracy of Emission Reduction Calculations

PJRCMD assessed the different areas (as mentioned below) which can affect the accuracy of the final emission reduction calculations:

Net electricity supplied to the grid: The energy meter readings are noted monthly and these records will be archived for crosschecking yearly figures. Monthly joint meter reading is taken jointly by the TNEB official with presence of PP in Tamil Nadu. At the conclusion of each meter reading an appointed representative of the TNEB and the PP sign a document indicating the number of Kilowatt-hours indicated by the meter.

Metering accuracy: The calibration of the meters has to be carried out every once a year as per validated VCS PD and monitoring plan.

During the verification of the project activity, PJRCMD observed that the calibration was performed by the TNEB at its own cost and tested and certified from an accepted laboratory standard meter in accordance with electricity board standards. However, PJRCMD also observed that PP has not followed the calibration frequency of meter as per validated monitoring plan from VCS PD.

PP has provided calibration certificates for the periods as can be seen from the table below:

Sl. No.	Name	HTSC No.	Energy Meter - S.No	Make	Type	Date of Calibration	Calibrating agency
1	NSL 1	751	046862782	Elster	ALPHA JL	3/03/2008	TNEB
			KAB 10100	Secure	E3V055	27/10/2010	TNEB
2	NSL 2	752	04681457	Elster	ALPHA JL	03/03/2008	TNEB
			04954987	Elster	ALPHA D+	27/10/2010	TNEB
3	NSL 3	754	04691230	Elster	ALPHA JL	03/03/2008	TNEB
			04954988	Elster	ALPHA D+	27/10/2010	TNEB
4	NSL 4	788	04681456	Elster	ALPHA JL	03/03/2008	TNEB
			T NB 03828	Secure	E3V055	27/10/2010	TNEB
5	NSL 5	753	04691234	Elster	ALPHA JL	03/03/2008	TNEB
			04691234	Elster	ALPHA JL	27/10/2010	TNEB
6	NSL 6	808	04681455	Elster	ALPHA JL	03/03/2008	TNEB
			04681455	Elster	ALPHA JL	27/10/2010	TNEB
7	NSL 7	728	KAB05700	Secure	E3V055	03/03/2008	TNEB

			KAB05700	Secure	E3V055	27/10/2010	TNEB
8	NSL 8	755	04681458	Elster	ALPHA JL	03/03/2008	TNEB
			04901444	Elster	ALPHA JL	27/10/2010	TNEB
9	NSL 9	690	04862925	Elster	Alpha D+	03/03/2008	TNEB
			04862925	Elster	Alpha D+	27/10/2010	TNEB

The meters are deemed to be working satisfactorily if the errors are within specifications i.e. +/- 0.5. It was noticed that the calibration for the WTGs was not available as per validated monitoring plan. However, the project proponent has applied a correction factor in line with the guideline from the “*Guidelines for the assessing compliance with the calibration frequency requirements, EB 52, Annex 60*” as higher of the errors between calibration report and maximum applicable to the accuracy class of the meter. During project site visit and calibration certificates [7] review, PJRCMD has found that all the meter has been working within maximum accuracy. PP has applied maximum accuracy (+/- 0.5) of the installed meter as correction factor which is conservative. The correction period has been reviewed by PJRCMD as per below table and was deemed to be correct and conservative in line with the guideline from EB.

As per requirement of from the EB (EB 52, Annex 60) PP has applied correction factor in periods mentioned in table below:

Location		Duration within the monitoring period where calibration has been delayed and correction factor applied
Name	HT.Sc.No	
NSL 1	751	31/03/2006 to 10/10/2006
		10/10/2007 to 30/03/2008
		30/03/2009 to 30/05/2009
NSL 2	752	31/03/2006 to 03/03/2008
		20/08/2009 to 07/02/2010
NSL 3	754	31/03/2006 to 03/03/2008
		16/08/2009 to 07/02/2010
NSL 4	788	29/04/2006 to 03/03/2008
		03/03/2009 to 07/02/2010
NSL 5	753	31/03/2006 to 03/03/2008
		03/03/2009 to 07/02/2010
NSL 6	808	17/05/2006 to 03/03/2008
		03/03/2009 to 07/02/2010
NSL 7	728	17/05/2006 to 29/06/2007
		03/03/2009 to 07/02/2010
NSL 8	755	17/05/2006 to 03/03/2008
		29/07/2009 to 07/02/2010
NSL 9	690	26/03/2006 to 10/08/2007
		03/03/2009 to 07/02/2010

Value of grid emission factor: PJRCMD was able to confirm that this parameter was fixed ex-ante during the validation of the project (Validation Report Version 01 dated

15 November 2009 and VCS validated PD Version 02 dated 27 October 2010) and the same was used for ER calculations for the current monitoring period. Even during validation, the parameter was derived from officially published latest database¹(version 04) from Central Electricity Authority of India, a subsidiary of Ministry of Power, Government of India, which is the authentic source of such information.

The emission factor for the Southern grid to which the project activity exports power to is determined as 0.9269 tCO₂/MWh.

3.5 Quality of Evidence to Determine Emission Reductions

The source of net energy generation, as reported in the validated PD, is the JMR sheets, and the same were used by the clients to calculate the EGy. 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 a Government representative (TNEB official), duly signed and acknowledged by both parties.

The emission factor for the Southern grid to which the project activity exports power to is determined as 0.9269 tCO₂/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 validated in the VCS PD.

PJRCDM was able to verify that the calculations are based on the authentic data from the joint meter reading sheets issued by the state electricity boards of respective states. The excel sheet used to calculate the monthly emission reduction figure were all tracked, checked and found to be consistent. Some errors were found in data transfer which were communicated to the project developer and the excel sheet was corrected accordingly.

3.6 Management and Operational System

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

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

¹ <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 “Wind Power Project at Anthiyur, Tamil Nadu” against the guidelines of VCS 2007.1. The project activity is generation of electricity by nine (9) Wind Turbine Generators (WTGs) installed in village of Anthiyur, Udumalpet and Pollachi Talukas of Coimbatore district in state of Tamil Nadu, India.

Verification was sought for the emission reductions achieved by the project within the period 1 April 2006 to 7 February 2010. 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 03 of the monitoring report, dated 16 December 2010.

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 validated PD and that the emission reductions presented in the monitoring report version 03 dated 16th December 2010, are correctly determined as per the VCS2007.1 standard and AMS-I.D methodology, version 14. Based on the above information, PJRCDM confirms the following:

Name of the project	“Wind Power Project at Anthiyur, Tamil Nadu”
VCS PD	Version 02 dated 27 October 2009
Methodology	AMS-I.D Version 14
Monitoring Report	Version 03 dated 16 December 2010
Reporting period	1 April 2006 to 7 February 2010

Verified emission in the above reporting period:

Project emissions	:	0	tCO ₂ equivalents
Baseline emissions	:	144528	tCO ₂ equivalents
Emission reductions	:	144528	tCO ₂ equivalents

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Total Year-Wise emission reductions:

<i>Period</i>	<i>Emission Reductions(tCO₂e)</i>
<i>1 April 2006- 7 January 2007</i>	34566
<i>8 January 2007 – 9 January 2008</i>	35501
<i>9 January 2008 – 7 January 2009</i>	34321
<i>7 January 2009 – 7 January 2010</i>	39244
<i>7 January 2010 – 7 February 2010</i>	896
<i>1 April 2006– 7 February 2010</i>	<i>144528</i>

Ajay Kr. Verma

Project Manager
PJRCDM

U. D. Dhyani

Site Program Manager
PJRCDM

APPENDIX I: DOCUMENTS REVIEWED

- /1/ Monitoring Report: “*Wind Power Project at Anthiyur, Tamil Nadu*” version 03, dated 16 December 2010 and the previous versions.
- /2/ Final validated VCS Project Description: “*Wind Power Project at Anthiyur, Tamil Nadu*” Version 02 dated 27 October 2009.
- /3/ VCS Validation Report – “*Wind Power Project at Anthiyur, Tamil Nadu*” Version 01 dated 15 November 2009
- /4/ Approved Small-scale Methodology – Indicative baseline and monitoring methodology AMS ID, version 14: “*Grid connected renewable electricity generation*”
- /5/ CDM Executive Board: Validation and Verification Manual, version 01.2
- /6/ Emission reduction excel works sheet, ‘*Verification Excel Sheet.xls*’
- /7/ Calibration Certificates for:
 - WTG Number NSL-1, NSL-2, NSL-3 , NSL-4 , NSL-5 , NSL-6 NSL-7 NSL-8 & NSL-9 dated 3 March 2008.
 - WTG Number NSL-1, NSL-2, NSL-3 ,NSL-4 , NSL-5 , NSL-6 NSL-7 NSL-8 & NSL-9 dated 27 October 2010.
- /8/ Joint meter Reading for each WTGs Number NSL-1, NSL-2, NSL-3, NSL-4 , NSL-5 , NSL-6 NSL-7 NSL-8 & NSL-9 from 1 April 2006 to 7 February 2010.
- /9/ Invoice for each WTGs Number NSL-1, NSL-2, NSL-3, NSL-4 , NSL-5 , NSL-6 NSL-7 NSL-8 & NSL-9 from 1 April 2006 to 7 February 2010.

APPENDIX II : RESOLUTION OF CARs AND CLs

<i>Draft report clarification requests and corrective action requests by verification team</i>	<i>Ref to MR</i>	<i>Summary of project owner response</i>	<i>Verification team conclusion</i>
CAR#1 PJRCDM has reviewed the provided calibration certificates for all WTGs dated 1 st March 2008. Please provide calibration for remaining period of monitoring from 1 st April 2006 to 1 st March 2008 and 1 st March 2008 to 7 th February 2010.		The calibration certificates for the remaining period have been provided to the DOE for reference. Response 2: There was a delay in calibration of energy meters in the current monitoring period. PP has followed the latest version of EB's guidance "Guidelines for assessing the compliance with the calibration frequency requirements" in order to calculate the emission reductions in a conservative manner for the period when there is a delayed calibration.	PJRCDM has reviewed the provided calibration certificates for all WTGs on dated 3rd March 2008 and 27th October 2010. During project site visit and calibration certificates [7] review, PJRCDM has found that all the meter has been working within maximum accuracy. PP has applied maximum accuracy (+/- 0.5) of the installed meter as correction factor which is conservative. It is also inline with EB guidance "Guidelines for assessing the compliance with the calibration frequency requirements". PJRCDM has reviewed the revised emission reduction estimation sheet and it is found to be OK. This CAR#1 is closed.
CAR #2 Please add details of WTG Location no, Date of calibration, Period for calibration not available in monitoring report.		The details on WTG Location No., Date of calibration and period of calibration has been provided in the revised version of Monitoring report (Version 02 Dated	PJRCDM has reviewed the revised monitoring report and found that details of WTG Location no, Date of calibration, Period for calibration has been added. It is found to be OK.

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<i>Draft report clarification requests and corrective action requests by verification team</i>	<i>Ref to MR</i>	<i>Summary of project owner response</i>	<i>Verification team conclusion</i>
		22/11/2010) in Annexure 1: Details of Energy meters	This CAR#2 is closed.
CL#1: 1. For WTG location 751, June 2009 (period of 16 th May 2009 to 8 th June 2009), invoice copy export unit and net units exported shown as 566420 and 566280 respectively. This is not matching with breakup sheet export unit and net generation 566480 and 566340 respectively. Please clarify. 2. For WTG location 751 months of September 2009 and October 2009, final reading date of Sep 2009 (8 th September 2009) and initial reading date of Oct 2009 (7 th October 2009) is not the same but readings are matching. Please clarify.		The energy meter for the WTG location 751 failed and extra 60 units wrongly entered by EB has been adjusted in the next month B form provided by TNEB. The changes have been incorporated in the revised version of the ER sheet and the monitoring report ((Version 02 Dated 22/11/2010).	1. PJRCDM has reviewed the invoice sheet of next month and it is found to be Ok. 2. PJRCDM has reviewed the revised emission reduction sheet and found to be OK. This CL#1 is closed.

VCS VERIFICATION REPORT



Draft report clarification requests and corrective action requests by verification team	Ref to MR	Summary of project owner response	Verification team conclusion
CL#2: 1. For WTG location 754 month of May 2007 invoice copy export unit and net generation shown as 289824 and 287208 respectively. This is not matching with breakup sheet export unit and net generation 290376 and 287760 respectively. Please clarify. 2. For WTG location 754 months pf November 2008 (8 th October 2008 to 14 th October 2008), JMR copy is missing.		1. Difference is due to TNEB reading mistake. This unit is adjusted in next month reading. 2. The JMR copy for the month of October 2008 for the WTG location 754 is being submitted to the DOE for reference.	1. PJRCMD has reviewed the next invoice sheet of next month and it is found to be Ok. 2. PJRCMD has reviewed the provided JMR copy of month November 2008 and it is found to be OK. This CL#2 is closed.
CL#3: For WTG location 788 months of July 2009 export, import and net generation reading found incorrect.		The suggested corrections have been incorporated in the revised version of the Monitoring report ((Version 02 Dated 22/11/2010)).	PJRCMD has reviewed the revised emission reduction sheet and found to be OK. This CL#3 is closed.
CL#4: For WTG location 753 months of July 2009 export, import and net generation reading found incorrect.		The suggested corrections have been incorporated in the revised version of the Emission reduction sheet and Monitoring report	PJRCMD has reviewed the revised emission reduction sheet and found to be OK. This CL#4 is closed.

VCS VERIFICATION REPORT



<i>Draft report clarification requests and corrective action requests by verification team</i>	<i>Ref to MR</i>	<i>Summary of project owner response</i>	<i>Verification team conclusion</i>
		((Version 02 Dated 22/11/2010).	
CL#5: For WTG location 728 months of July 2007 Jul 07 (26 th June 2007 to 10 th July 2007) invoice copy is missing.		The evidence document is being submitted to the DOE for reference.	PJRCDM has reviewed provided invoice copies and found to be OK. This CL#5 is closed.
CL#6 For WTG location 728 months December 2009 and January 2010 Initial and final reading date is incorrect.		The suggested corrections have been incorporated in the revised version of the Emission reductions sheet and Monitoring report (Version 02 Dated 22/11/2010).	PJRCDM has reviewed the revised emission reduction sheet and found to be OK. This CL#6 is closed.
CL#7 PJRCDM team has found differences in commissioning dates for WTG location of 752 and 754. please provide the commissioning certificates for the above WTGs.		The commissioning certificates are being submitted to the DOE for reference.	PJRCDM has reviewed the provided commission certificates and compare with validated VCD PD And validation report. It is found to be OK. This CL#7 is closed.
CAR#3 For the WTG locations of 754, 788, 753, 808, 728 and 755 months of May (7 th April 2006 to 9 th May 2006) Generation period found		The monitoring period chosen was from 1st April 2006 to 07th February 2010. The generation period has been revised in the Monitoring report (Version 02	PJRCDM has reviewed the revised emission reduction sheet and found to be OK. This CAR#3 is closed.

VCS VERIFICATION REPORT

<i>Draft report clarification requests and corrective action requests by verification team</i>	<i>Ref to MR</i>	<i>Summary of project owner response</i>	<i>Verification team conclusion</i>
incorrect and also it is prior to monitoring period chosen. Please clarify.		Dated 22/11/2010) and ER sheet as per this.	
CAR#4 Please mention the generation period for each WTGs individually as it differs for all the wind machines.		The suggested changes have been incorporated in the revised version of the monitoring report (Version 02 Dated 22/11/2010).	PJRCDM has reviewed the revised emission reduction sheet and found to be OK. This CAR#4 is closed.
CL#8: PP is requested to include a discussion in the monitoring report regarding the difference between the estimated yearly emission reduction figure (as stated in the validated VCS PD) and the actual emission reductions resulting from the project activity (as stated in the monitoring report). Reasons for the same needs to be clearly stated in the monitoring report.		The suggested changes have been incorporated in the revised version of the monitoring report (Version 02 Dated 22/11/2010). Response2: The suggested changes have been included in the revised version of the Monitoring Report.	PJRCDM has reviewed the revised MR version 03 dated 16th December 2010 and found the details justification added for difference in estimated and actual emission reduction. It is found to be OK. This CL#8 is closed.

APPENDIX III: LIST OF PARAMETERS

List of parameters covered during the verification period under consideration (1 April 2006 to 7 February 2010) and details regarding the monitoring and reporting practices.

S.No.	Monitoring and reporting practice/Parameters	Electricity export from grid, Net electricity supplied to grid, Electricity imported from grid.
1.	Monitoring and reporting frequency as verified during the site visit.	<i>The monthly meter reading is taken jointly by the Tamil Nadu Electricity Board (TNEB) in presence of PP. At the conclusion of each meter reading an appointed representative of the TNEB and the PP sign a document indicating the number of Kilowatt-hours indicated by the meter.</i>
2.	Monitoring equipment verified during the site visit.	<i>Energy meter Accuracy of main and check meter: 0.5 class</i>
3	Calibration frequency and other details verified during the site visit.	<i>The calibration of the meters has to be carried out once a year as per validated VCS PD and monitoring plan. The calibration was performed by the TNEB at its own cost and tested and certified from an accepted laboratory standard meter in accordance with electricity board standards. PJRCMD has found that PP has not followed the calibration frequency of meters as per validated monitoring plan from VCS PD. However, the calibration reports were submitted by the PP for the available period and applying the principles of conservativeness, the PP has adjusted the total generation from the WTG against the maximum permissible error of the meter as per EB guidance "Guidelines for assessing compliance with the calibration frequency requirements" EB 52 Annex 60.</i>
4.	The above parameters are in line with the MP agreed in the validated PD.	<i>See discussion above.</i>
5	The above parameters are in line with the monitoring methodology applied for the proposed project.	<i>See discussion above.</i>
6	Calibration entity and if the same is in line with the monitoring plan as agreed in the validated PD.	<i>Meter testing has been carried out by the state electricity Boards i.e. Tamil Nadu Electricity Board (TNEB). The calibration entity is in line with the monitoring plan as mentioned in the VCS PD.</i>