



VERIFICATION REPORT WIND WORLD (INDIA) LIMITED

VERIFICATION OF THE BUNDLED WIND ENERGY POWER PROJECTS (2004 POLICY) IN RAJASTHAN

REPORT No.BVC/INDIA -VR/647.49/2014

REVISION No. 00

BUREAU VERITAS CERTIFICATION

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VERIFICATION REPORT

Date of first issue: 23/08/2014	Organizational unit: Bureau Veritas Certification Holding SAS
Client: Wind World India Limited	Client ref.: Mr. Yogesh Mehra

Summary:

Bureau Veritas Certification has conducted the 5th periodic verification of *"Bundled wind energy power projects (2004 policy) in Rajasthan"*, CDM Registration Reference Number 1166, owned by Wind World (India) Limited, which is located in Kita and Bhu village, in Jaisalmer District of Rajasthan and applying the methodology ACM0002, Version 6.0, on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

The verification scope is defined as an independent and objective review and ex-post determination of the monitored GHG emission reductions, and consisted of the following three phases: i) desk review of the project design, the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in the approved revised project design documents. Installed equipments being essential for generating emission reduction run reliably and are calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions.

The GHG emission reductions are calculated without material misstatements, and the emission reductions verified totalize 33,776 tons of CO₂e for the monitoring period.

Our opinion relates to the projects' GHG emissions and resulting GHG emission reductions reported and related to the valid and registered project baseline, approved revised monitoring plan and its associated documents.

Reporting period: 01/10/2012 to 30/04/2014
 Baseline emissions: 33,776 t CO₂ equivalents.
 Project emissions: 0 t CO₂ equivalents.
 Leakage emissions: 0 t CO₂ equivalents.
 Emission Reductions: 33,776 t CO₂ equivalents.

Report No.: BVC-India /VR/647.49/2014	Subject Group: CDM
Project title: Bundled wind energy power projects (2004 policy) in Rajasthan	
Work carried out by: Mr. Anurag Juyal - Team Leader	
Internal Technical Review carried out by: Mr. Sanjay Patankar – Internal Technical Review	
Date of this revision: 02/09/2014	Rev. No.: 00
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Work approved by:

Ms. Anna Kalacheva

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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
DRR	Daily Reading Record
ETN	Electricity Transaction Note
FAR	Forward Action Request
GHG	Green House Gas(es)
MoV	Means of Verification
MP	Monitoring Plan
MR	Monitoring Report
MRR	Monthly Reading Record
PDD	Project Design Document
PLF	Plant Load Factor
PP	Project Participant
PPA	Power Purchase Agreement
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard

Table of Contents	Page
1. INTRODUCTION	5
1.1. Objective	5
1.2. Scope	5
1.3. GHG Project Description	6
1.4. Verification Team	6
2. METHODOLOGY	7
2.1. Review of Documents	7
2.2. Follow-up Interviews	7
2.3. Resolution of Clarification, Corrective and Forward Action Requests	8
2.4. Internal Technical Review	9
3. VERIFICATION CONCLUSIONS.....	9
3.1. Remaining issues from validation or previous verification (213)	10
3.2. Compliance of the project implementation with the registered project design document (228)	10
3.3. Compliance of the monitoring plan with the monitoring methodology including applicable tool(s) (232)	11
3.4. Compliance of monitoring activities with the monitoring plan (235-236)	11
3.5. Compliance with the calibration frequency requirements for measuring instruments (243)	14
3.6. Assessment of data and calculation of emission reductions (246)	15
4. VERIFICATION OPINION.....	18
5. REFERENCES	19
6. CURRICULA VITAE OF THE DOE'S VERIFICATION TEAM MEMBERS	20
APPENDIX A: CDM PROJECT VERIFICATION PROTOCOL...	



1. INTRODUCTION

Wind World (India) Limited has commissioned Bureau Veritas Certification to verify the emissions reductions of its CDM project *"Bundled wind energy power projects (2004 policy) in Rajasthan"*, (hereafter called "the project") located at Kita and Bhu village of Jaisalmer District, Rajasthan State in India.

This report summarizes the findings of the verification of the Project, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1. Objective

The objective of CDM verification is to conduct a thorough, independent assessment of the registered project activities.

In carrying out its verification work, the DOE shall ensure that the project activity complies with the requirements of paragraph 62 of the CDM modalities and procedures. In particular, this assessment shall:

- (a) Ensure that the project activity has been implemented and operated as per the registered PDD or any approved revised PDD, and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place;
- (b) Ensure that the monitoring report and other supporting documents provided are complete in accordance with latest applicable version of the completeness checklist for requests for issuance of CERs, verifiable, and in accordance with applicable CDM requirements;
- (c) Ensure that actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan or any revised approved monitoring plan, and the approved methodology including applicable tool(s);
- (d) Evaluate the data recorded and stored as per the monitoring methodology including applicable tool(s).

1.2. Scope

The verification scope is defined as an independent and objective review and ex-post determination of the monitored GHG emission reductions. The verification is based on the validated and registered project design document, the monitoring report, emission reduction calculation spreadsheet, and supporting documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

The verification is not meant to provide any consulting service towards the PPs. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.

1.3. GHG Project Description

The project activity comprises of installation of 31 nos. Wind Turbine Generators, each of 0.8 MW capacity, thereby totaling a project capacity of 24.80 MW located in the State of Rajasthan, India.

The installations are done by a set of 12 investors. The entire electricity generated from the registered project activity is exported to the state grid with a firm PPA in place.

The annual estimated emission reductions are 41,766 tCO₂e.

Project title:	"Bundled wind energy power projects (2004 policy) in Rajasthan"
UNFCCC ref number:	1166
Registration Date:	30/10/2008
Crediting Period:	30/10/2008- 29/10/2018 (fixed)
Monitoring Period:	01/10/2012- 30/04/2014
Project Participants:	Wind World (India) Limited
Methodologies used	ACM0002 version 6.0
Location of the Project:	Kita and Bhu village, in Jaisalmer District of Rajasthan
Geo coordinates:	The project area extends between latitude 26° 41' & 26° 46.5' North and longitude 70° 57.5' & 71° 4' East
UNFCCC view page:	https://cdm.unfccc.int/Projects/DB/SGS-UKL1181723770.26/view

[Post Registration Changes]

A request for approval of permanent change from the registered monitoring plan as described in the registered PDD has been submitted prior to the submission of the request for issuance and approved by the Board on 02/08/2010.

The details regarding the post-registration changes can be found in the validation opinion on revision in monitoring plan.

The project activity involves supply, erection, commissioning and operation of 31 WEGs of rated capacity 800 kW each. The machines are Enercon E-48 make. The WEGs generates 3-phase power at 400V, which is stepped up to 33 KV. The project activity can operate in the frequency range of 47.5–51.5 Hz and in the voltage range of 400 V ± 12.5%.

The verification team confirms that there have been no modifications or alterations to the project activity during this monitoring period.

1.4. Verification Team

The assessment team and internal technical reviewer team consist of the following personnel:

FUNCTION	NAME	TA 1.2	TA X.X	TASK PERFORMED*
Team Leader	Mr. Anurag Juyal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> DR <input checked="" type="checkbox"/> SV <input type="checkbox"/> RI <input type="checkbox"/> TR
Technical Specialist	N.A.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> DR <input checked="" type="checkbox"/> SV <input type="checkbox"/> RI <input type="checkbox"/> TR



Internal Technical Reviewer (ITR)	Mr. Sanjay Patankar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI <input checked="" type="checkbox"/> TR
Report approval	Ms. Anna Kalacheva	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> DR <input type="checkbox"/> SV <input checked="" type="checkbox"/> RI <input type="checkbox"/> TR

*DR = Document Review; SV = Site Visit; RI = Report issuance; TR = Internal Technical Review

2. METHODOLOGY

The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a verification protocol was customized for the project, according to the version 07.0 of the Clean Development Mechanism Validation and Verification Standard, issued by CDM Executive Board after its 79th meeting on Ref/1/. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from verifying the identified criteria. The verification protocol serves the following purposes:

- It organizes, details and clarifies the requirements a CDM project is expected to meet;
- It ensures a transparent verification process where the verifier will document how a particular requirement has been verified and the result of the verification.

The completed verification protocol is enclosed in Appendix A to this report.

2.1. Review of Documents

The assessment of the project documentation provided by the project participant is based upon both quantitative and qualitative information on emission reductions. Quantitative information comprises the reported numbers in the monitoring report (MR) version 02 dated 05/08/2014 (/2/) and emission reduction calculation spreadsheet (/3/). Qualitative information comprises information on internal management controls, calculation procedures, procedures for transfer of data, frequency of emissions reports, and review and internal audit of calculations.

The monitoring report version 01 submitted by the project participant was also web hosted on the UNFCCC-CDM web site on 25/06/2014 and thus, was available in the public domain.

In addition to the monitoring documentation provided by the project participants, the DOE reviews:

- (a) The registered PDD and the approved revised monitoring plan and changes from the registered PDD, and the corresponding validation opinion
- (b) The validation report
- (c) The applied monitoring methodology (/4/);
- (d) Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board
- (e) Other information and references relevant to the project activity's resulting emission reductions (e.g. IPCC reports, laboratory analysis or national regulations).

2.2. Follow-up Interviews

On 18/07/2014, Bureau Veritas Certification conducted the site visit to confirm selected information and to discuss issues identified in the document review. Representatives of Wind

World (India) Limited were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Wind World (India) Limited	<ul style="list-style-type: none"> ➤ Project Design and implementation ➤ Technical equipment, calibration and operation ➤ Monitoring Plan and management procedures ➤ Monitoring data ➤ Data uncertainty and residual risks (QA/QC) ➤ GHG Calculation ➤ Environmental Impacts ➤ Compliance with National Laws and Regulations
Wind World (India) Limited	<ul style="list-style-type: none"> ➤ Monitoring Plan ➤ Monitored data and Monitoring Report ➤ GHG Calculations
Wind World (India) Limited (O & M contractor)	<ul style="list-style-type: none"> ➤ Metering System at the site ➤ Technical Equipment and operation ➤ Monitoring ➤ Data Recording and archiving ➤ Calibration of measuring equipments ➤ Data uncertainty and residual risks

2.3. Resolution of Clarification, Corrective and Forward Action Requests

The objective of this phase of the verification is to resolve issues related to the monitoring, implementation and operations of the registered project activity that could impair the capacity of the registered project activity to achieve emission reductions or influence the monitoring and reporting of emission reductions prior to Bureau Veritas Certification's positive conclusion on the GHG emission reduction calculation.

Findings established during the verification can either be seen as a non-fulfillment of criteria ensuring the proper implementation of a project or where a risk to deliver high quality emission reductions is identified.

A Corrective Action Request (CAR) is raised, if one of the following situations occurs:

- (a) 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;
- (b) Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;
- (c) Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;
- (d) Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

A Clarification Request (CL) is raised, if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.



A Forward Action Request (FAR) is raised, for actions if the monitoring and reporting require attention and/or adjustment for the next verification period.

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol in Appendix A.

2.4. Internal Technical Review

The verification report underwent an Internal Technical Review (ITR) before requesting issuance of CERs for the project activity.

The ITR is an independent process performed to examine thoroughly that the process of verification has been carried out in conformance with the requirements of the verification scheme as well as internal Bureau Veritas Certification procedures.

The Team Leader provides a copy of the verification report to the reviewer, including any necessary verification documentation. The reviewer reviews the submitted documentation for conformance with the verification scheme. This will be a comprehensive review of all documentation generated during the verification process.

When performing an Internal Technical Review, the reviewer ensures that:

- The verification activity has been performed by the team by exercising utmost diligence and complete adherence to the CDM rules and requirements.
- The review encompasses all aspects related to the project which includes project design, baseline, additionality, monitoring plans and emission reduction calculations, internal quality assurance systems of the project participant as well as the project activity, review of the stakeholder comments and responses, closure of CARs, CLs and FARs during the verification exercise, review of sample documents.

The reviewer may raise Clarification Requests to the verification team and discusses these matters with Team Leader.

After the agreement of the responses on the Clarification Requests from the verification team as well as the PP(s), the finalized verification report is accepted for further processing such as uploading via the UNFCCC interface.

3. VERIFICATION CONCLUSIONS

In the following sections, the conclusions of the verification are stated.

The findings from the desk review of the original monitoring documents and the findings from interviews during the follow up visit are described in the Verification Protocol in Appendix A.

The Clarification, Corrective and Forward Action Requests are stated, where applicable, in the following sections and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in 04 CAR(s), 05 CL(s) and 00 FAR(s).

The CARs, CLs and FARs were closed based on adequate responses from the Project Participant(s) which meet the applicable requirements. They have been reassessed before their formal acceptance and closure.



The number between brackets at the end of each section corresponds to the VVS paragraph.

3.1. Remaining issues from validation or previous verification (213)

All CARs and CLs raised were successfully closed during the validation and previous verification stage and no remaining issues were left.

3.2. Compliance of the project implementation with the registered project design document (228)

The Project activity has been implemented and commissioned prior to the registration of the project activity. The WEGs under the project activity were commissioned between 25/03/2006 and 13/05/2006. All facilities and equipment as described in the registered PDD have been installed at the project site. The project activity comprises of installation of 31 nos. Wind Turbine Generators, each of 0.8 MW capacity, thereby totaling a project capacity of 24.80 MW located in the State of Rajasthan, India.

During the site visit and document review of the registered PDD, the verification team observed that the entire electricity generated from all these Wind Turbine Generator's is supplied to the grid, which is in line with the registered PDD (/5/). All the Wind Turbine Generators of the project activity are connected to a main and check meter of accuracy class 0.2 at the Temderai sub-station¹ (Wind World India Substation), to which project as well as non-project activity Wind Turbine Generators are connected to. All the WECs are further connected to Amarsagar sub-station² (State Utility Substation).

The energy meters are tri-vector energy meters, capable of measuring export as well as import values. The meter readings are recorded monthly by representatives of the state utility and the Project Participant at the sub-station. Based on this meter reading and the LCS controller reading of the project as well as the non-project activity Wind Turbine Generator's connected to the same meter, an apportioning procedure is used to deduce the net electricity supplied by the individual Wind Turbine Generator to the grid, which is indicated in the monthly Break-up Sheet. Subsequently the Project Participant raises an invoice for payment, based on the net electricity supplied value indicated in the break-up sheet.

The verification team confirms that no information about the project activity provided in the monitoring report is different from that stated in the registered PDD, and which could have caused or is likely to cause any increase in the estimates of emission reductions during the future monitoring periods.

Information provided in the final MR is in accordance with that stated in the registered PDD and approved revised monitoring plan. Further analysis of monitored parameters as reported in the MR compared to those estimated in the PDD is developed in section 3.4 of this report.

Thus the verification team confirms that the actual operation of the project activity is in line with the description in the registered PDD. There was no other data or information provided in the monitoring report that was different from the description stated in the registered PDD and

¹ Back-up meters are installed at Temderai substation

² Billing meters are installed at Amarsagar substation



approved revised monitoring plan and having caused or likely to cause any increase in the estimates of emission reductions in the future monitoring periods.

[Management and Operation]

The PP has operated the Project as per the registered PDD. The monitoring organization has been set up and all monitoring staffs have been trained. Meter reading records of all the meters are based on continuously measurement and monthly recorded by the PP. The O & M contractor issues the Break-up sheet to the PP every month to confirm the electricity exported to and imported from the grid.

✎ Corresponding to the paragraph 228 of VVS version 07.0, Bureau Veritas Certification can confirm that:

- The implementation of the Project is consistent with the registered PDD and approved revised monitoring plan.
- The Project is operated as per the registered PDD by the PP.

3.3. Compliance of the monitoring plan with the monitoring methodology including applicable tool(s) (232)

The monitoring plan is in accordance with the approved methodology applied by the proposed CDM project activity. The primary monitoring in the project activity is that of the net electricity supplied to the state electricity grid.

The verification team hereby confirms that the monitoring plan is in accordance with the approved methodology applied by the proposed CDM project activity.

✎ Corresponding to the paragraph 232 of VVS version 07.0, Bureau Veritas Certification can confirm that the monitoring plan is in accordance with the approved methodology including applicable tool(s) applied by the Project.

3.4. Compliance of monitoring activities with the monitoring plan (235-236)

Permanent changes to the monitoring plan as described in the registered PDD have occurred and identified during previous verification.

A request for approval of changes was submitted prior to submitting the request for issuance and approved by the Board on 02/08/2010.

Monitoring has been carried out in accordance with the approved revised monitoring plan.

[Parameters and information flow]

The parameters required by the monitoring plan and how Bureau Veritas Certification has verified the information flow (from data generation, aggregation, to recording, calculation and reporting) for these parameters including the values in the monitoring report are described below:

Parameters monitored:

Sr. no.	Parameter	Data information flow
(1)	Electricity exported by a WEG, as measured at the controller (LCS). ($E_{\text{Controller, Export}}$)	<p>The verification team noted that the electricity generation of all WEG's (project activity) has been monitored through LCS meters.</p> <p><i>Based on the above, the verification team concludes that the monitoring of electricity generated by all the project activity WEGs is in line with the provision described in the monitoring plan.</i></p>
(2)	Electricity exported by all the WEGs connected to the main meter at the substation, measured at the controller of each WEG ($\sum E_{\text{Controller, Export}}$)	<p>The verification team noted that the electricity generation of all WEG's (project activity and non-project activity) has been monitored through LCS meters.</p> <p><i>Based on the above, the verification team concludes that the monitoring of electricity generated by all the project activity and non-project activity WEGs is in line with the provision described in the monitoring plan.</i></p>
(3)	Electricity exported, as recorded by the main meter at the substation ($E_{\text{JMR, Export}}$)	<p>The verification team noted that the electricity exported by both project activity and non-project activity WEGs has been monitored through main and check meters installed at state utility substation.</p> <p><i>Based on the above, the verification team concludes that the monitoring of electricity exported by all the project activity and non-project activity WEGs is in line with the provision described in the monitoring plan.</i></p>
(4)	Electricity imported, as recorded by the main meter at the substation ($E_{\text{JMR, Import}}$)	<p>The verification team noted that the electricity imported by both project activity and non-project activity WEGs has been monitored through main and check meters installed at state utility substation.</p> <p><i>Based on the above, the verification team concludes that the monitoring of electricity imported by all the project activity and non-project activity WEGs is in line with the provision described in the monitoring plan.</i></p>
(5)	Summation of electricity exported to the grid by all the WEGs (31 machines) included in the project activity ($\sum E_{\text{WEG, Export}}$) Project	<p>The monitoring of this parameter as stated in the revised monitoring plan and observed during the site visit is as follows-</p> <p>The wind farm at the project site includes WEGs owned by both PP and non-PP. All the WEGs in the wind farm supply electricity to a common pooling substation where the electricity supplied by the entire wind farm is measured through a common set of meters.</p> <p>Electricity supplied by each WTG is measured both at the WTG end as well as the pooling substation i.e. grid interconnection point.</p>

		<p>On a particular day of a month, joint meter reading is taken at the grid interconnection point viz. the pooling substation by representatives of the state utility and the PP.</p> <p>Since the electricity measured (export & import) at the pooling substation represents the contribution by the entire wind farm, hence a break up sheet is prepared by the technology supplier viz. Wind World (India) Limited to calculate the electricity supplied by each WEG in a particular month and sent to respective project owners. The break-up sheet is prepared on the basis on the basis of readings taken at WTG end i.e. LCS controller as well as the pooling substation and the electricity exported by project activity WEGs is calculated as follows-</p> <p>Export multiplication factor = $\frac{E_{JMR, Export}}{\sum E_{Controller, Export}}$</p> <p>$(\sum_{Project} E_{WEG, Export}) = E_{Controller, Export} \times \text{Export multiplication factor}$</p> <p><i>Based on the above, the verification team concludes that the monitoring of electricity exported to the grid by the project activity is in line with the provision described in the revised monitoring plan.</i></p>
(6)	<p>Summation of electricity imported from the grid by all the WEGs (31 machines) included in the project activity $(\sum_{Project} E_{WEG, Import})$</p>	<p>The monitoring of this parameter as stated in the PDD and observed during the site visit is as follows-</p> <p>The wind farm at the project site includes WEGs owned by both PP and non-PP. All the WEGs in the wind farm supply electricity to a common pooling substation where the electricity supplied by the entire wind farm is measured through a common set of meters.</p> <p>Electricity supplied by each WTG is measured both at the WTG end as well as the pooling substation i.e. grid interconnection point.</p> <p>On a particular day of a month, joint meter reading is taken at the grid interconnection point viz. the pooling substation by representatives of the state utility and the PP.</p> <p>Since the electricity measured (export & import) at the pooling substation represents the contribution by the entire wind farm, hence a break up sheet is prepared by the technology supplier viz. Wind World (India) Limited to calculate the electricity supplied by each WEG in a particular month and sent to respective project owners. The break-up sheet is prepared on the basis on the basis of readings taken at WTG end i.e. LCS controller as well as the pooling substation and the electricity imported by project activity WEG is calculated as follows-</p>

		<p>Import multiplication factor = $EG_{JMR, Import} / \sum E_{Controller, Export}$</p> <p>$(\sum E_{WEG, Import})_{Project} = E_{Controller, Export} \times \text{Import multiplication factor}$</p> <p><i>Based on the above, the verification team concludes that the monitoring of electricity imported from the grid by the project activity is in line with the provision described in the monitoring plan.</i></p>
(7)	Net electricity supplied to the grid by the project activity (EG_y)	<p>Based on the parameters described above, the net electricity supplied to the grid is calculated as per the following formula by the state utility:</p> <p>$EG_y = (\sum E_{WEG, Export})_{Project} - (\sum E_{WEG, Import})_{Project}$</p> <p>The verification team has cross-checked the value of EG_y from the monthly break-up sheet (/6/) for all the months during the entire monitoring period and found them to be appropriate.</p> <p><i>Based on the above, the verification team concludes that the monitoring of net electricity supplied to grid by the project activity is in line with the provision described in the monitoring plan.</i></p>

Parameters determined ex-ante:

- (1) $EF_{CM,y}$ Combined margin emission factor of NEWNE electricity grid

The emission factor of the Project has been determined ex-ante in the registered PDD. The emission factor used in the monitoring report has been verified against the PDD and found them to be consistent.

Corresponding to the paragraph 235 and 236 of VVS version 07.0, Bureau Veritas Certification can confirm that:

- The monitoring has been carried out in accordance with the approved revised monitoring plan.
- All parameters required by the monitoring plan have been sufficiently monitored and correctly listed. The monitored data for required parameters have been verified by checking the whole information flow.

3.5. Compliance with the calibration frequency requirements for measuring instruments (243)

The revised monitoring plan indicates the frequency of calibration of the main/check meter at the sub-station as once in a year.

VERIFICATION REPORT

The verification team reviewed the calibration reports of the main/check meter at the sub-station (Ref /7/ & /8/) and noted that the calibration was conducted as follows:

Meter description	Serial No.	Make	Accuracy class	Metering point	Calibration during monitoring period in 2012	Calibration during monitoring period in 2013	Validity
Main meter (Line I)	TNU00946	Secure	0.2	Amarsagar Substation	26-12-2012	26-12-2013	25-12-2014
Backup meter (Line I)	RJB00052	Secure	0.2	Temdarai Substation	28-12-2012	28-12-2013	27-12-2014
Main meter (Line II)	TNU00945	Secure	0.2	Amarsagar Substation	26-12-2012	26-12-2013	25-12-2014
Backup meter (Line II)	ABB00691	Secure	0.2	Temdarai Substation	28-12-2012	28-12-2013	27-12-2014

Thus the verification team confirms that there are no data uncertainties in the monitored data and therefore the calculation of emission reductions is correct and reliable.

Corresponding to the paragraph 243 of VVS version 07.0, Bureau Veritas Certification can confirm that:

- The calibration is conducted at the frequency as specified by the methodology and the approved revised monitoring plan.

3.6. Assessment of data and calculation of emission reductions (246)

A complete set of data for the specified monitoring period is available.

The critical parameter used for the determination of Emission Reductions is the net electricity supplied to the grid by the Project. The data pertaining to the above parameter are maintained in the identified records. All the data are in compliance with that stated in the Monitoring Report version 2.

As per the methodology ACM0002 version 6.0 and the registered PDD, the emission reductions for the Project are calculated as baseline emissions minus the project emissions. Hence the emission reduction is determined by the following formula:

$$ER_y = BE_y - PE_y$$

Where,

ER_y : Emission reductions

BE_y : Baseline emissions

PE_y : Project emissions

The data used for calculation of the GHG emission reductions are as follows:

- a) The net electricity exported to the grid by the project activity
- b) The NEWNE regional grid emission factor.

As per the monitoring plan of the registered PDD, the following complete data set was required for the specified monitoring period to calculate the GHG emission reductions resulting from the project activity-

Baseline emission	
Parameter	Source
<i>Net electricity supplied to the grid by the project activity (EG_y)</i>	<u>Break-sheet based on joint meter reading</u> All the break-up sheet showing the energy supplied to grid by the project activity wind mills for the current monitoring period have been cross-checked by the verification team. The value in the statement is aggregated to calculate the net electricity exported to the grid by the project activity. The PP has included a separates worksheet in the ER calculation spreadsheet, which mentions monthly statement readings for the project activity for the current monitoring period separately for each billing month.

The verification team confirms that complete data set for all the above mentioned monitored parameters is available for the current monitoring period and hence any theoretical assumption or request for deviation was not required before submitting the request for issuance.

Cross check of information in monitoring report

The information in the monitoring report has been cross-checked through other documentary evidence as explained below:

Baseline emission	
Parameter	Cross-check Source
<i>Net electricity supplied to the grid by the project activity (EG_y)</i>	The value of net electricity supplied to the grid as reflected in the monthly statements has been compared with the invoices submitted to state utility (Ref /9/).

Calculation procedure of baseline emissions, project emissions and leakage

Calculation procedure	
<i>Baseline emissions</i>	Baseline emission calculations have been done in the monitoring report as per the following equation - $BE_y = EG_y * EF_{CM,y}$ Where – BE_y – Baseline emissions EG – Net electricity supplied to the grid by the project activity

	$EF_{CM,y}$ – Baseline emission factor for NEWNE regional grid The above mentioned calculation procedure is in line with the procedure described in the registered PDD.
Project emissions	Not applicable since there are no emissions attributed to the project activity outside the project boundary.
Leakage	Not applicable since there are no emissions attributed to the project activity outside the project boundary.

The verification team confirms that appropriate methods and formulae for calculating baseline emissions have been followed.

Emission factor and default values

Baseline emission factor of NEWNE regional grid - The emission factor taken for the calculation of baseline emissions (873.87 tCO₂e/GWh) is determined ex-ante and fixed for the crediting period. The same is in line with the registered PDD.

The verification team confirms that the emission factor is in line with the requirement of the applied methodology and associated tools.

[Comparison of ERs]

The estimated emission reductions for the monitoring period are 66,130 tCO₂e as per the registered PDD. The actual operation period of the Project in the monitoring period is 19 months. The corresponding estimate in the monitoring period are $(41,766/12) \times (19) = 66130$ (approx) tCO₂e. The actual emission reductions are 33,776 tCO₂e and hence lower than the estimated value in the monitoring period.

Corresponding to the paragraph 246 of VVS version 07.0, Bureau Veritas Certification can confirm that:

- Data used for the determination of the emission reductions are available and monitored in accordance with the approved revised monitoring.
- Information and data provided in the monitoring report have been cross-checked with other sources such as invoices, break-up sheets and calibration records.
- Appropriate methods and formulae for calculating baseline emissions, project emissions and leakage have been followed.
- Assumptions, emission factors and default values that were applied in the calculations have been justified.



4. VERIFICATION OPINION

Bureau Veritas Certification has performed the 5th periodic verification of “**Bundled wind energy power projects (2004 policy) in Rajasthan**” CDM Registration Reference Number 1166, which is located in Kita and Bhu village of Jaisalmer District, Rajasthan State in India and applying the methodology ACM0002/version 06.0. The verification was performed based on the requirements set by the CDM and relevant guidance provided by CMP and the CDM Executive Board.


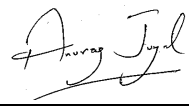
The verification consisted of the following three phases: i) desk review of the project design, the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion.

The management of Wind World (India) Limited is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions of the project on the basis set out within the monitoring plan contained in the approved revised PDD. The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of GHG emission reductions from the project, is the responsibility of the management of the project.

Bureau Veritas Certification has verified the project Monitoring Report version 02 dated 05/08/2014 for the reporting period as indicated below. Bureau Veritas Certification confirms that the project is implemented as described in the approved revised project design documents. Installed equipments being essential for generating emission reductions run reliably and are calibrated appropriately. The monitoring system is in place and the Project is generating GHG emission reductions as a CDM project.

Bureau Veritas Certification can confirm that the GHG emission reductions are calculated without material misstatements. Our opinion relates to the projects' GHG emissions and resulting GHG emission reductions reported and related to the approved revised monitoring plan and its associated documents. Based on the evidence and information that are considered necessary to guarantee that GHG emission reductions are appropriately calculated, Bureau Veritas Certification confirms the following statement:

Reporting period:	01/10/2012- 30/04/2014
Baseline emissions:	33,776 t CO ₂ equivalents
Project emissions:	0 t CO ₂ equivalents
Leakage emissions:	0 t CO ₂ equivalents
Emission Reductions:	33,776 t CO ₂ equivalents

	
Mr. Sanjay Patankar	Mr. Anurag Juyal
Internal Technical Reviewer	Team Leader
02/09/2014	23/08/2014

5. REFERENCES

Documents reviewed:

/1/	VVS version 7.0
/2/	Revised Final Monitoring Report, version 02, dated 05/08/2014
/3/	Emission Reduction Calculation Spreadsheet
/4/	ACM0002 / version 6.0 " <i>Consolidated baseline methodology for grid-connected electricity generation from renewable sources</i> "
/5/	Registered PDD version 6.0 dated 23/10/2008
/6/	Monthly Break-up sheets for the project activity for the current monitoring period.
/7/	Calibration certificate of the main meter Line 1 and Line 2 of the project activity dated 26/12/2012 and 26/12/2013.
/8/	Calibration certificate of the back-up meter Line 1 and Line 2 of the project activity dated 28/12/2012 and 28/12/2013.
/9/	Invoices raised by the project participant on state utility, for the current monitoring period

Persons interviewed:

	Wind World (India) Limited	
/10/	Ms. Anushree Mishra	CDM Consultant
/11/	Mr. Manoj Kumar	Sr. Tech.
/12/	Mr. Deepak	Assistant Engineer
/13/	Mr. Hreeday Kumar	Assistant Engineer



6. CURRICULA VITAE OF THE DOE'S VERIFICATION TEAM MEMBERS

Mr. Anurag Juyal	Bureau Veritas Certification, India	<p>Team Leader, Climate Change Lead Verifier</p> <p>Mr. Anurag Juyal is a Post-graduate in Energy Systems with more than 6 years of experience in the field of climate change services. He is working in Bureau Veritas Certification (India) Pvt. Ltd. as Lead Verifier-Climate Change. Prior to joining Bureau Veritas, he worked on GS/CDM/VCS projects as a consultant. He has received extensive training in CDM validation and verification processes and participated in assessment of CDM projects.</p>
Ms. Sanjay Patankar	Bureau Veritas Certification, India	<p>Internal Technical Reviewer, Climate Change Local Product Manager</p> <p>Educational qualifications: B.E. (Mech.) M.E. (Mech.)</p> <p>He has over 20 years of experience in engineering manufacturing industry covering various functions like enterprise management, product design, engineering, tool & die design, improvements in the production shop, quality assurance & control and systems planning and implementation, including ISO 9001 based quality management systems. Working for the last 2 years in Bureau Veritas Certification (India) Pvt. Ltd. as Lead Auditor for ISO 9001, 14001 and OHSAS 18001 standards/specifications. Has undergone training related to Clean Development Mechanism and is currently involved in validation and verification of CDM project activities.</p>



APPENDIX A: CDM PROJECT VERIFICATION PROTOCOL (Rev 08)

Table 1 Verification requirements based on VVS version 07.0 (EB 79 Annex 4), PS version 07.0 (EB 79 Annex 3), PCP version 07.0 (EB 79 Annex 5), and Guidelines for completing the Monitoring Report Form version 04.0 (EB 75 Annex 7)

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Part I Cover Page					
(a) Is the title of the project activity provided?	MR		The title of the project activity has been provided as <i>"Bundled wind energy power projects (2004 policy) in Rajasthan"</i> .	OK	OK
(b) Is the reference number of the project activity provided?	MR		Reference number of the project activity has been provided as 1166.	OK	OK
(c) Is the version number of the monitoring report indicated?	MR		Version number is indicated as 1.	OK	OK
(d) Is the completion date of the monitoring report provided in DD/MM/YYYY format?	MR		Completion date of the monitoring report is not provided in DD/MM/YYYY format. Please clarify.	CL 1	
(e) Is the registration date of the project activity provided in DD/MM/YYYY format?	MR		Registration date of the project activity is not provided in DD/MM/YYYY format. Please clarify.	CL 2	
(f) Are the monitoring period number and duration of this monitoring period (first and last days included in DD/MM/YYYY format) provided?	MR		Monitoring period number is provided as 5 th , however the first and last days of the duration of monitoring period is not provided in DD/MM/YYYY format. Please clarify.	CL 3	
(g) Are project participants indicated?	MR		Project participant has been indicated as <i>"Wind World (India) Limited"</i>	OK	OK
(h) Is the host party (ies) indicated?	MR		Host party has been indicated as India.	OK	OK
(i) Are the sectoral scope(s) and applied methodology (ies) indicated?	MR		Yes. Sectoral scope is indicated as 1 and applied methodology is mentioned as ACM0002/version 06.	OK	OK
(j) Is the estimated amount of GHG emission	MR		Estimated amount of GHG emission reductions for this	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
reductions or net anthropogenic GHG removals by sinks for this monitoring period in the registered PDD indicated?			monitoring period has been indicated as 66,130 tCO ₂ e.		
(k) Are the actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period indicated?	MR		Actual GHG emission reductions achieved in this monitoring period is indicated as 33,776 tCO ₂ e.	OK	OK
(l) Are the actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period up to 31 December 2012 indicated (if applicable)?	MR		Actual GHG emission reductions achieved during the period up to 31 December 2012 is indicated in the MR.	OK	OK
(m) Are the actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period from 1 January 2013 onwards indicated (if applicable)?	MR		Actual GHG emission reductions achieved during the period from 1 January 2013 onwards is indicated.	OK	OK
Part II Monitoring Report					
A. Description of project activity					
A.1 Purpose and general description of project activity					
A.1.1 Is the description of the project activity to be presented in this section a brief summary of the detailed description given in the section B.1 Implementation status of the project activity?	MR		The description provided is a brief summary of the detailed description given in section B.1 Implementation status of the project activity.	OK	OK
A.1.2 Does this description include:					
A.1.2.1 Purpose of the project activity and the measures taken for GHG emission	MR		Purpose of the project activity and the measures taken	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
reductions or net anthropogenic GHG removals by sinks?			for GHG emission reductions are provided in the MR.		
A.1.2.2 Brief description of the installed technology and equipments?	MR		Brief description of the installed technology and equipments is provided in the MR.	OK	OK
A.1.2.3 Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.)?	MR		Relevant dates are provided.	OK	OK
A.1.2.4 Total GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period?	MR		Total GHG emission reductions achieved in this monitoring period has been specified in the MR.	OK	OK
A.2 Location of project activity					
A.2.1 Is the information on the location of the project activity provided, including Host Party (ies), Region/State/Province, City/Town/Community, Physical/Geographical location etc.?	MR		Yes, location of the project activity with latitude longitude coordinates of each wind turbine is presented. Details regarding host party, village, District & state is also provided.	OK	OK
A.3 Parties and project participant(s)					
A.3.1 Is the Party (ies) and project participant(s) involved in the project activity listed in the provided table?	MR		Party is mentioned as India and project participant is mentioned as " <i>Wind World (India) Limited</i> ".	OK	OK
A.4 Reference of applied methodology					
A.4.1 Is the exact reference (number, title, version) of the methodology (ies) indicated?	MR		The number and version of the methodology has been correctly indicated as : Number – ACM0002	CL 4	



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			Version – 6.0 Title is incorrectly mentioned as <i>Consolidated monitoring methodology for grid-connected electricity generation from renewable sources</i> . Please clarify.		
A.4.2 Is the exact reference (number, title, version) of any tools and other methodologies to which the applied methodology (ies) refers indicated?	MR		All the tools used in the PDD, to which the methodology refers are indicated.	OK	OK
A.5 Crediting period of project activity					
A.5.1 Are the type, start date and length of the crediting period corresponding to this monitoring period provided?	MR		Yes, the type, start date and length of the crediting period corresponding to this monitoring period is provided.	OK	OK
B. Implementation of project activity					
B.1 Description of implemented registered project activity					
B.1.1 Is the description of the installed technology, technical processes and equipments provided, include diagrams where appropriate?	MR PS	191(a)	Description of the installed technology and equipments has been provided in the MR.	OK	OK
B.1.2 Is the information on the implementation and actual operation of the project activity, including relevant dates (e.g. construction, commissioning, continued operation periods, etc.) provided?	PS	191(b)	Yes, information about the continued operation period of the project activity has been provided.	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.1.3 Is the description of: (i) the events or situations that occurred during the monitoring period that may impact the applicability of the methodology (ii) how the issues resulting from these events or situations have been addressed provided?	PS	191(c)	There are no events or situation that occurred during the monitoring period that may impact applicability of methodology. Validation team has verified the same during the interview with representatives of O&M service provider during the site visit.	OK	OK
B.1.4 Have the project participants addressed the FARs identified during validation or previous verification(s)?	VVS	213	No FARs were identified during validation or previous verification.	OK	OK
B.1.5 Have the implementation and operation of the project activity been conducted in accordance with the description contained in the registered PDD?	VVS	226	Implementation and operation of the project activity has been conducted in accordance with the description contained in the approved revised PDD.	OK	OK
B.1.6 Are all physical features of the project activity in the registered PDD in place?	VVS	227	All the physical features of the project activity in the revised PDD are in place.	OK	OK
B.1.7 Have the project participants operated the project activity as per the registered PDD or any approved revised PDD?	VVS	227	Yes, the project has been operated as per the approved revised PDD. The same was confirmed during physical site visit on 18/07/2014 by validation team.	OK	OK
B.1.8 Was an on-site visit conducted?	VVS	227	An on-site visit was conducted on 18/07/2014 by a single member verification team.	OK	OK
B.1.9 If an on-site visit is not conducted, is the rationale of the decision justified?	VVS	227	An on-site visit was conducted on 18/07/2014 by a single member verification team.	OK	OK
B.2 Post registration changes					
B.2.1 Temporary deviations from registered monitoring plan or applied methodology					
B.2.1.1 Is it indicated whether any temporary deviations have been applied during this monitoring period?	MR		Not applicable	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.2.1.2 Is a description of the deviation(s) in accordance with applicable provisions in the Project standard provided?	MR		Not applicable	OK	OK
B.2.1.3 Are the reasons for the deviation(s), how it deviates from the monitoring plan and/or applied methodology(ies), the duration for which the deviation(s) is(are) applicable and justification on the conservativeness of the approach included in the description?	MR		Not applicable	OK	OK
B.2.1.4 For deviation(s) that require prior approval by the Board, are the date of approval and reference number included in the description?	MR		Not applicable	OK	OK
B.2.2 Corrections					
B.2.2.1 Is it indicated whether any corrections to project information or parameters fixed at validation have been approved during this monitoring period or submitted with this monitoring report?	MR		Not applicable	OK	OK
B.2.2.2 In cases where the correction(s) and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, are the approval date and reference number provided? Otherwise, are the version number and the completion date of the revised PDD provided?	MR		Not applicable	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.2.3 Permanent changes from registered monitoring plan or applied methodology					
B.2.3.1 Is it indicated whether any permanent changes from the registered monitoring plan or applied methodologies have been approved during this monitoring period or submitted with this monitoring report?	MR		Permanent changes to the registered monitoring plan were submitted and approved by UNFCCC on 02/08/2010.	OK	OK
B.2.3.2 In cases where the change(s) and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, are the approval date and reference number provided? Otherwise, are the version number and the completion date of the revised PDD provided?	MR		Permanent changes to the registered monitoring plan were submitted and approved by UNFCCC on 02/08/2010.	OK	OK
B.2.4 Changes to project design of registered project activity					
B.2.4.1 Is it indicated whether any changes to the project design of the project activity have been approved during this monitoring period or submitted with this monitoring report?	MR		Not applicable	OK	OK
B.2.4.2 In cases where the change(s) and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, are the approval date and reference number provided? Otherwise, are the version number and	MR		Not applicable	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
the completion date of the revised PDD provided?					
B.2.5 Changes to start date of crediting period					
B.2.5.1 Is it indicated whether any changes to the start date of the crediting period have been approved during this monitoring period?	MR		Not applicable	OK	OK
B.2.5.2 In cases where the changes and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, are the approval date and reference number provided?	MR		Not applicable	OK	OK
B.2.6 Types of changes specific to afforestation or reforestation project activity					
B.2.6.1 Is it indicated whether any changes specific to afforestation or reforestation project activities have been applied during this monitoring period based on applicable provisions in the Project standard that do not require prior approval by the Board?	MR		Not applicable	OK	OK
B.2.6.2 If changes were applied, are the version number and the completion date of the revised PDD provided?	MR		Not applicable	OK	OK
C. Description of monitoring system					
C.1 General requirements					



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
C.1.1 Have project participants described the monitoring system and provided line diagrams (graphical schemes) showing all relevant monitoring points?	MR PS	193	The project participant has described the monitoring system and provided line diagrams showing all relevant monitoring points.	OK	OK
C.1.2 Does this description where appropriate include data collection procedures (information flow including data generation, aggregation, recording, calculations and reporting), organizational structure, roles and responsibilities of personnel, and emergency procedures for the monitoring system?	MR PS	193	Description includes data collection procedure, organizational structure, roles and responsibilities of personnel and emergency procedures.	OK	OK
C.1.3 Is the monitoring plan of the project activity in accordance with the applied methodology including applicable tool(s)?	VVS	229	Yes, the monitoring plan implemented is in accordance with the applied methodology.	OK	OK
C.1.4 For monitoring aspects that are not specified in the methodology, particularly in the case of small-scale methodologies (e.g. additional monitoring parameters, monitoring frequency and calibration frequency), are there any issues which may enhance the level of accuracy and completeness of the monitoring plan and should bring to the attention of the Board?	VVS	231	Not Applicable	OK	OK
C.1.5 Has the monitoring plan been properly implemented and followed by the project participants?	VVS	234(a)	Monitoring plan has been properly implemented and followed by the project participant.	OK	OK
C.1.6 Have all parameters stated in the monitoring plan and relevant Board	VVS	234(b)		-	-



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
decisions been monitored and updated as applicable, including:					
C.1.6.1 Project emission parameters?	VVS	234(b)	Project emissions are considered as zero which is in line with the methodology.	OK	OK
C.1.6.2 Baseline emission parameters?	VVS	234(b)	Yes	OK	OK
C.1.6.3 Leakage parameters?	VVS	234(b)	Leakage is not considered.	OK	OK
C.1.6.4 Management and operational system: the responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan?	VVS	234(b)	Responsibilities and authorities for monitoring and reporting are in accordance with responsibilities stated in monitoring plan.	OK	OK
D. Data and parameters					
D.1 Data and parameters fixed ex ante or at renewal of crediting period					
D.1.1 For "Purpose of data", is one of the following options chose: (a) Calculation of baseline emissions or baseline net GHG removals by sinks; (b) Calculation of project emissions or actual net GHG removals by sinks; (c) Calculation of leakage?	MR		Purpose of data is appropriately stated for parameters fixed ex-ante.	OK	OK
D.1.2 For "Value(s) applied", if applicable, is one table used to report multiple values referring to the same data and parameter? If necessary, are reference(s) to electronic spreadsheets used?	MR		Value applied has been provided in the MR which is in accordance with the registered PDD.	OK	OK
D.1.3 Is the source of data provide and/or	PS	195(d)	Source of data has been provided in the MR.	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
identified?					
D.1.4 Is information about appropriate emission factors, IPCC default values and any other reference values that have been used in the calculation of GHG emission reductions or net GHG removals provided?	PS	195(g)	Information about emission factors has been provided. IPCC default values or any other reference values have not been used.	OK	OK
D.2 Data and parameters monitored					
D.2.1 For “Purpose of data”, is one of the following options chose: (a) Calculation of baseline emissions or baseline net GHG removals by sinks; (b) Calculation of project emissions or actual net GHG removals by sinks; (c) Calculation of leakage?	MR		Purpose of data is appropriately stated for parameters being monitored.	OK	OK
D.2.2 For “Value(s) of monitored parameter”, if applicable, is one table used to report multiple values referring to the same data and parameter? If necessary, are reference(s) to electronic spreadsheets used?	MR		Value for the parameter Net electricity supplied to the grid by the project is not provided in the MR. Please clarify.	CL 5	
D.2.3 Are the values of the monitored parameter for the purpose of calculating GHG emission reductions or net GHG removals provided? Where data are measured continuously, are they presented using an appropriate time interval? For default values (such as an IPCC value), where it is ex post confirmed, is the most recent value	PS	195(a)	Value for the parameter Net electricity supplied to the grid by the project is not provided in the MR. Please clarify.	(CL 5)	



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
applied?					
D.2.4 Is the equipment used to monitor each parameter described, including details on accuracy class, and calibration information (frequency, date of calibration and validity), if applicable as per monitoring plan?	PS	195(b)	As per the information in the MR, the last calibration was carried out on 26/12/2012 and 28/12/2012 for main and back meters respectively. The validity of these calibrations does not cover the entire duration of the monitoring period. Please explain.	CAR 1	
D.2.5 Is the equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan, the applied methodology, the Board guidance, local/national standards, or as per the manufacturer's specification?	VVS	234(c)	As per the information in the MR, the last calibration was carried out on 26/12/2012 and 28/12/2012 for main and back meters respectively. The validity of these calibrations does not cover the entire duration of the monitoring period. Please explain.	(CAR1)	
D.2.6 Is the calibration of those measuring equipments that have an impact on the claimed emission reductions conducted by the project participants at a frequency specified in the applied monitoring methodology and/or the monitoring plan?	VVS	237	As per the information in the MR, the last calibration was carried out on 26/12/2012 and 28/12/2012 for main and back meters respectively. The validity of these calibrations does not cover the entire duration of the monitoring period. Please explain.	(CAR1)	
D.2.7 If, during verification of a certain monitoring period, the calibration has been delayed and the calibration has been implemented after the monitoring period in consideration (i.e. the results of delayed calibration are available), is the following conservative approach adopted in the calculation of emission reductions:	VVS	238			
D.2.7.1 Applying the maximum permissible error of the instrument to the measured	VVS	238(a)	As per the information in the MR, the last calibration was carried out on 26/12/2012 and 28/12/2012 for main	(CAR1)	



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
values taken during the period between the scheduled date of calibration and the actual date of calibration, if the results of the delayed calibration do not show any errors in the measuring equipment, or if the error is smaller than the maximum permissible error?			and back meters respectively. The validity of these calibrations does not cover the entire duration of the monitoring period. Please explain.		
D.2.7.2 Applying the error identified in the delayed calibration test, if the error is beyond the maximum permissible error of the measuring equipment?	VVS	238(b)	As per the information in the MR, the last calibration was carried out on 26/12/2012 and 28/12/2012 for main and back meters respectively. The validity of these calibrations does not cover the entire duration of the monitoring period. Please explain.	(CAR1)	
D.2.8 Has the error has been applied:	VVS	239	-	-	-
D.2.8.1 In a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed emission reductions?	VVS	239(a)	As per the information in the MR, the last calibration was carried out on 26/12/2012 and 28/12/2012 for main and back meters respectively. The validity of these calibrations does not cover the entire duration of the monitoring period. Please explain.	(CAR1)	
D.2.8.2 For all measured values taken during the period between the scheduled date of calibration and the actual date of calibration.	VVS	239(b)	As per the information in the MR, the last calibration was carried out on 26/12/2012 and 28/12/2012 for main and back meters respectively. The validity of these calibrations does not cover the entire duration of the monitoring period. Please explain.	(CAR1)	
D.2.9 In cases where the results of the delayed calibration are not available, or the calibration has not been conducted at the time of verification, prior to finalizing verification, were the project participants	VVS	240	As per the information in the MR, the last calibration was carried out on 26/12/2012 and 28/12/2012 for main and back meters respectively. The validity of these calibrations does not cover the entire duration of the monitoring period. Please explain.	(CAR1)	



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
requested to conduct the required calibration have the project participants calculated the emission reductions conservatively using the approach mentioned in item "D.2.7" above?					
D.2.10 In cases where it is not possible for the project participants to conduct the calibration at a frequency specified by either the applied methodology, guidance provided by the Board, and/or the registered monitoring plan due to reasons beyond the control of PPs, are the requirements for post registration changes, in section 9.5 of the VVS, followed?	VVS	241	As per the information in the MR, the last calibration was carried out on 26/12/2012 and 28/12/2012 for main and back meters respectively. The validity of these calibrations does not cover the entire duration of the monitoring period. Please explain.	(CAR1)	
D.2.11 In cases where neither the monitoring methodology nor the monitoring plan specify any requirements for calibration frequency for measuring equipments, are the equipments calibrated either in accordance with the specifications of the local/national standards, or as per the manufacturer's specification? If neither local/national standards nor the manufacturer's specification are available, were international standards used?	VVS	242	As per the information in the MR, the last calibration was carried out on 26/12/2012 and 28/12/2012 for main and back meters respectively. The validity of these calibrations does not cover the entire duration of the monitoring period. Please explain.	(CAR1)	
D.2.12 Is it described how the parameters are measured/calculated and the measurement and recording frequency?	PS	195(c)	Yes, the procedure for measurement & calculation and measurement & recording frequency is provided in the MR.	OK	OK
D.2.13 Are monitoring results consistently recorded	VVS	234(d)	Yes, monitoring results are recorded on a monthly	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
as per approved frequency?			basis, which is in line with the applied methodology and the approved revised PDD.		
D.2.14 Is the source of data (e.g. logbooks, daily records, surveys, etc.) provide and/or identified?	PS	195(d)	Monthly JMRs for some of the customer's is not provided to the verification team. For e.g. JMR for customer Ushdev International is not provided for Aug 2013 to Jan 2014. Please explain.	CAR 2	
D.2.15 Where relevant is the calculation method of the parameter provided?	PS	195(e)	Yes. Calculation method of monitored parameter is provided in the MR.	OK	OK
D.2.16 Are the QA/QC procedures applied described (if applicable per monitoring plan)?	PS	195(f)	QA/QC procedure have been described in the MR.	OK	OK
D.2.17 Have quality assurance and quality control procedures been applied in accordance with the monitoring plan or the revised monitoring plan?	VVS	234(e)	QA/QC has been applied in accordance with the monitoring plan.	OK	OK
D.2.18 Is information about appropriate emission factors, IPCC default values and any other reference values that have been used in the calculation of GHG emission reductions or net GHG removals provided?	PS	195(g)	Yes.	OK	OK
D.3 Implementation of sampling plan					
D.3.1 Is a description provided on how project participants implemented the sampling efforts and surveys for those data and parameters according to the sampling plan, Include:	MR		Not applicable.	OK	OK
D.3.1.1 Description of implemented sampling design?	MR		Not applicable.	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
D.3.1.2 Collected data (electronic spreadsheets may be attached and referenced)?	MR		Not applicable.	OK	OK
D.3.1.3 Analysis of the collected data?	MR		Not applicable.	OK	OK
D.3.1.4 Demonstration on whether the required confidence/precision has been met?	MR		Not applicable.	OK	OK
E. Calculation of emission reductions or GHG removals by sinks					
E.1 Calculation of baseline emissions or baseline net GHG removals by sinks					
E.1.1 Are the sample calculations for all formulae used and calculation of baseline emissions or baseline net GHG removals by sinks provided, applying actual values?	MR PS	197(a)	Value of net electricity supplied to the grid in the ER spreadsheet do not matches with the document submitted. Please explain.	CAR 3	
E.1.2 Are the electronic spreadsheets to present full calculations in the monitoring report attached?	MR		Electronic spreadsheet to present full calculations in the MR is attached.	OK	OK
E.2 Calculation of project emissions or actual net GHG removals by sinks					
E.2.1 Are the sample calculations for all formulae used and calculation of project emissions or actual net GHG removals by sinks provided, applying actual values?	MR PS	197(b)	Not applicable	OK	OK
E.2.2 Are the electronic spreadsheets to present full calculations in the monitoring report attached?	MR		Not applicable	OK	OK
E.3 Calculation of leakage					



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
E.3.1 Are the sample calculations for all formulae used and calculation of leakage provided, applying actual values?	MR PS	197(c)	Not applicable	OK	OK
E.3.2 Are the electronic spreadsheets to present full calculations in the monitoring report attached?	MR		Not applicable	OK	OK
E.4 Summary of calculation of emission reductions or net anthropogenic GHG removals by sinks					
E.4.1 Are the results of above sections summarized and GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period presented, using the provided table?	MR PS	197(d)	Results of GHG emission reductions for this monitoring period has been presented using the provided table.	OK	OK
E.4.2 Is a complete set of data for the specified monitoring period is available?	VVS	245(a)	Monthly JMRs for some of the customer's is not provided to the verification team. For e.g. JMR for customer Ushdev International is not provided for Aug 2013 to Jan 2014. Please explain.	(CAR 2)	
E.4.3 Has information provided in the monitoring report been cross-checked with other sources such as plant log books, inventories, purchase records, laboratory analysis?	VVS	245(b)	Information provided in the MR has been cross-checked with invoices.	OK	OK
E.4.4 Have calculations of baseline emissions, and project activity emissions and leakage, as appropriate, been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document?	VVS	245(c)	Yes, the calculations of baseline emissions are carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document. PP has also provided the ER calculation spreadsheet and the formulae used are in line with approved revised PDD.	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
E.4.5 Have any assumptions used in emission calculations been justified?	VVS	245(d)	Assumptions have not been used for emission calculations.	OK	OK
E.4.6 Have appropriate emission factors, IPCC default values and other reference values been correctly applied?	VVS	245(e)	Appropriate emission factors have been applied in the MR.	OK	OK
E.5 Comparison of actual emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD					
E.5.1 Is a comparison of actual GHG emission reductions or net anthropogenic GHG removal of the project activity achieved during this monitoring period with the estimates in the registered PDD provided?	MR PS	198	Annual comparison of PLF achieved by the project activity or ERs achieved is not provided in the MR. Please explain.	CAR 4	
E.6 Remarks on difference from estimated value in registered PDD					
E.6.1 For any registered CDM project activity, except A/R project activities, have project participants explained the cause of any increase in the actual GHG emission reductions achieved during the current monitoring period (e.g. higher water availability, higher plant load factor, etc.), including all information (i.e. data and/or parameters) that is different from that stated in the registered PDD?	MR PS	199	Annual comparison of PLF achieved by the project activity or ERs achieved is not provided in the MR. Please explain.	(CAR4)	
E.7 Actual emission reductions or net anthropogenic GHG removals by sinks					



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
during the first commitment period and the period from 1 January 2013 onwards					
E.7.1 If the monitoring period starts before 31 December 2012 and ends anytime thereafter, are actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved for the following two periods provided respectively? (a) Up to 31 December 2012 (1 st commitment period); (b) From 1 January 2013 onwards.	MR		Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved for period upto 31 st Dec 2012 and 1 st Jan 2013 onwards is provided separately.	OK	OK
E.7.2 Is it ensured that the achieved GHG emission reductions or net anthropogenic GHG removals by sinks are calculated proportionally for each period? In cases where annual caps were applied in the calculations, is it ensured that the annual caps are pro-rated to each period?	MR		Not applicable.	OK	OK



VERIFICATION REPORT

Table 2 Resolution of Corrective Action /Clarification / Forward Action Requests

Draft report clarifications and corrective action requests by verification team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
<u>CL 1</u> Completion date of the monitoring report is not provided in DD/MM/YYYY format. Please clarify.	1(d)	PP has revised the date format of the monitoring report completion date.	Completion date of monitoring report is now provided in DD/MM/YYYY format. Hence CL 1 is closed.
<u>CL 2</u> Registration date of the project activity is not provided in DD/MM/YYYY format. Please clarify.	1(e)	PP has revised the date format of the registration date.	Registration date of project activity is now provided in DD/MM/YYYY format. Hence CL 2 is closed.
<u>CL 3</u> Monitoring period number is provided as 5 th , however the first and last days of the duration of monitoring period is not provided in DD/MM/YYYY format. Please clarify.	1(f)	PP has revised the date format of the first and last days of the duration of monitoring period	First and last days of the duration of monitoring period is now provided in DD/MM/YYYY format. Hence CL 3 is closed.



VERIFICATION REPORT

Draft report clarifications and corrective action requests by verification team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
<p><u>CL 4</u></p> <p>The number and version of the methodology has been correctly indicated as :</p> <p>Number – ACM0002</p> <p>Version – 6.0</p> <p>Title is incorrectly mentioned as <i>Consolidated monitoring methodology for grid-connected electricity generation from renewable sources</i>. Please clarify.</p>	A.4.1	PP has revised the title of the methodology in the monitoring report.	<p>PP has revised the title of the methodology in the MR now.</p> <p><i>Hence CL 4 is closed.</i></p>
<p><u>CL 5</u></p> <p>Value for the parameter Net electricity supplied to the grid by the project is not provided in the MR. Please clarify.</p>	D.2.2	PP has inserted the net electricity supplied to the grid by the project activity in the MR.	<p>Value of net electricity supplied to the grid is now provided in the MR.</p> <p><i>Hence CL 5 is closed.</i></p>
<p><u>CAR 1</u></p> <p>As per the information in the MR, the last calibration was carried out on 26/12/2012 and 28/12/2012 for main and back meters respectively. The validity of these calibrations does not cover the entire duration of the monitoring period. Please explain.</p>	D.2.4	PP has revised the calibration table with all the latest calibration details and also submitted the calibration certificate to the DOE.	<p>PP has now included details of calibration carried out in 2013 as well.</p> <p>Calibration was carried out within one year of last year's calibration.</p> <p><i>Hence CAR 1 is closed.</i></p>



VERIFICATION REPORT

Draft report clarifications and corrective action requests by verification team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
<u>CAR 2</u> Monthly JMRs for some of the customer's is not provided to the verification team. For e.g. JMR for customer Ushdev International is not provided for Aug 2013 to Jan 2014. Please explain.	D.2.14	The pending credit breakup reports of the customers have been submitted to the DOE.	All the pending JMRs have been submitted now to the DOE. <i>Hence CAR 2 is closed.</i>
<u>CAR 3</u> Value of net electricity supplied to the grid in the ER spreadsheet do not matches with the document submitted. Please explain.	E.1.1	The values of net electricity supplied to the grid in the ER spreadsheet has been corrected as per the invoices and credit break report	Value of net electricity supplied to the grid is now corrected as per documents submitted. <i>Hence CAR 3 is closed.</i>
<u>CAR 4</u> Annual comparison of PLF achieved by the project activity or ERs achieved is not provided in the MR. Please explain.	E.5.1	Annual PLF comparison is not mentioned in the MR as the same is not required as per prescribed MR format. Moreover, considering 4 verifications earlier, actual PLF has remained below the estimated PLF as per the registered PDD. Hence the annual comparison of PLF is not required.	The justification provided is in accordance with the MR guidelines and hence CAR 4 is closed.