



# VERIFICATION REPORT WIND WORLD (INDIA) LIMITED

## VERIFICATION OF THE BUNDLED WIND POWER PROJECT IN JAISALMER (RAJASTHAN IN INDIA) MANAGED BY ENERCON (INDIA) LTD

UNFCCC REGISTRATION No 0310

REPORT No. BVC/INDIA-VR 4/619.49/2013

REVISION No. 01

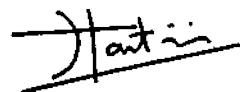
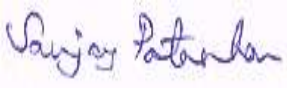
MONITORING PERIOD: 01/01/2013-31/08/2013

### BUREAU VERITAS CERTIFICATION

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## VERIFICATION REPORT

<b>Date of first issue:</b> 24/11/2013		<b>Organizational unit:</b> Bureau Veritas Certification Holding SAS																
<b>Client:</b> Wind World (India) Limited		<b>Client ref.:</b> Mr. Yogesh Mehra																
<b>Summary:</b> <p>Bureau Veritas Certification has made the 4<sup>th</sup> periodic verification of the "Bundled Wind power project in Jaisalmer (Rajasthan in India) managed by Enercon (India) Ltd.", CDM Registration Reference Number 0310, project of Wind World (India) Limited located in Soda village, in Jaisalmer District in the State of Rajasthan, India and applying the methodology ACM0002 Version 04, 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.</p> <p>The verification scope is defined as a periodic independent review and ex post determination by the Designated Operational Entity of the monitored reductions in GHG emissions during defined verification period, and consisted of the following three phases: i) desk review of the project design and 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 &amp; Opinion, was conducted using Bureau Veritas Certification internal procedures.</p> <p>In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in validated and approved project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is already generating GHG emission reductions. The GHG emission reduction is calculated without material misstatements, and the emission reductions verified totalize 48,769 tons of CO<sub>2</sub>eq for the monitoring period.</p> <p>Our opinion relates to the project's GHG emissions and resulting GHG emission reductions reported and related to the valid and registered project baseline and approved revised monitoring plan, and its associated documents.</p> <table> <tr> <td>Reporting period</td> <td>:</td> <td>01/01/2013 to 31/08/2013</td> </tr> <tr> <td>Baseline emissions</td> <td>:</td> <td>48,769 t CO<sub>2</sub> equivalents.</td> </tr> <tr> <td>Project emissions</td> <td>:</td> <td>0 t CO<sub>2</sub> equivalents.</td> </tr> <tr> <td>Leakage emissions</td> <td>:</td> <td>0 t CO<sub>2</sub> equivalents.</td> </tr> <tr> <td>Emission Reductions</td> <td>:</td> <td>48,769 t CO<sub>2</sub> equivalents</td> </tr> </table>				Reporting period	:	01/01/2013 to 31/08/2013	Baseline emissions	:	48,769 t CO <sub>2</sub> equivalents.	Project emissions	:	0 t CO <sub>2</sub> equivalents.	Leakage emissions	:	0 t CO <sub>2</sub> equivalents.	Emission Reductions	:	48,769 t CO <sub>2</sub> equivalents
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<b>Project title:</b> Bundled Wind power project in Jaisalmer (Rajasthan in India) managed by Enercon (India) Ltd.		<b>Indexing terms</b> <b>Work approved by:</b> Mr. Mathieu Martini 																
<b>Work carried out by:</b> Mr. Anurag Juyal – Team Leader Mr. Prabhavtar Singh – Team Member		<input checked="" type="checkbox"/> No distribution without permission from the Client or responsible organizational unit  <input type="checkbox"/> Limited distribution  <input type="checkbox"/> Unrestricted distribution																
<b>Internal Technical Review carried out by:</b>  Sanjay S Patankar																		
<b>Date of this revision:</b> 17/12/2013	<b>Rev. No.:</b> 01	<b>Number of pages:</b> 43																

**Abbreviations change / add to the list as necessary**

AVVNL	Ajmer Vidut Vitran Nigam Limited
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2eq</sub>	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
FAR	Forward Action Request
GHG	Green House Gas(es)
I	Interview
IETA	International Emissions Trading Association
JMR	Joint Meter Reading
MoV	Means of Verification
MR	Monitoring Report
RRVPNL	Rajasthan Rajya Vidyut Prasaran Nigam Limited
JVVNL	Jaipur Vidyut Vitran Nigam Limited
JhVVNL	Jodhpur Vidyut Vitran Nigam Limited
NGO	Non Government Organization
PCF	Prototype Carbon Fund
PDD	Project Design Document
VVS	Validation and Verification Standard
WTG	Wind Turbine Generator
WEC	Wind Energy Convertor



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## 1. INTRODUCTION

Wind World (India) Limited has commissioned Bureau Veritas Certification to verify the emissions reductions of its CDM project 'Bundled Wind power project in Jaisalmer (Rajasthan in India) managed by Enercon (India) Ltd.' (hereafter called "the project") at Soda village, in Jaisalmer District in the State of Rajasthan, 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

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

Based on the applicable requirements of paragraph 62 of the CDM modalities and procedures, this assessment shall:

- (a) Ensure that the project activity has been implemented and operated as per the registered 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 and 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 and the approved methodology;
- (d) Evaluate the data recorded and stored as per the monitoring methodology.

### 1.2. Scope

The verification scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant 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 towards the Client. 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 90 nos. of Wind Turbine Generators (WTGs) with unit size installed capacity of 0.6MW, providing a total installed capacity of 54MW. The installed WTGs generate electricity and export the same to the NEWNE grid of India.

The main purpose of the project activity is to reduce the Greenhouse Gas emissions by generating clean electricity from wind energy. Electricity generation in conventional grid-connected power plants, which consists of primarily thermal power plants, is displaced by the project activity; thereby reducing greenhouse gas emissions.

The first WEC under the project activity was commissioned on 29 September 2003 and the last WEC under the project activity was commissioned on 30 June 2004 and the entire electricity is exported to the Ajmer Vidyut Vitran Nigam Limited (Ajmer Discom) Jaipur Vidyut Vitran Nigam Limited (Jaipur Discom), under a long term PPA. The project participant has chosen a fixed crediting period for 10 years starting from 01/07/2004 to 30/06/2014.

The commissioning of the entire project activity was completed prior to the registration of the project with UNFCCC.

Project title:	Bundled Wind power project in Jaisalmer (Rajasthan in India) managed by Enercon (India) Ltd.
UNFCCC ref number:	0310
Registration Date:	29/05/2006
Crediting Period:	01/07/2004 – 30/06/2014
Monitoring Period:	01/01/2013 to 31/08/2013 (First and last days included)
Project Participants:	Wind World (India) Limited
Methodologies used	ACM0002, Version 4
Location of the Project:	Soda village, in Jaisalmer District in the State of Rajasthan, India.
Geo coordinates:	Latitude: 26°40'N to 26°42'N ; Longitude: 69°36'E to 69°38'E
UNFCCC view page:	<a href="http://cdm.unfccc.int/Projects/DB/DNV-CUK1143050217.74/view">http://cdm.unfccc.int/Projects/DB/DNV-CUK1143050217.74/view</a>

#### Post Registration Changes to the project activity:

Prior to this monitoring period, the project activity has undergone the post-registration changes. A Revised Monitoring Plan (RMP) along with the validation opinion of the RMP was submitted to the CDM Executive Board. The RMP was approved by the CDM Executive Board on 13 July 2012. The reference to the post registration changes provided in the Monitoring Report by the



PP. The verification team confirms that the RMP of the project is already approved by the CDM Executive Board prior to the submission of this issuance request.

No other changes to the project design have been identified during this verification. The implementation and operation of the project activity have been conducted in accordance with the description contained in the registered PDD and the Revised Monitoring Plan (RMP). All the 90 WTGs of the project activity were already commissioned at the time of the project validation. The details of the same has already been provided under the registered PDD and found consistent with respect to the physical site visit conducted by the verification team on 16/10/2013.

## 1.4. Verification Team

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

FUNCTION	NAME	TA 1.2	TASK PERFORMED*
Team Leader	Anurag Juyal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI <input type="checkbox"/> TR
Team Member	Prabhavtar Singh	<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)	Sanjay Patankar	<input checked="" type="checkbox"/>	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI <input checked="" type="checkbox"/> TR
Report Issuance	Mathieu Martini	<input type="checkbox"/>	<input checked="" 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

## 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 05.0 of the Clean Development Mechanism Validation and Verification Standard, issued by the Executive Board at its 75<sup>th</sup> meeting on 04/10/2013. 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 version 02 dated 15/11/2013 and



emission reduction calculation spreadsheet version. Qualitative information comprises information on internal management controls, calculation procedures, and procedures for transfer of data, frequency of emissions reports, and review and internal audit of calculations.

The monitoring report submitted by the project participant was also web hosted on the UNFCCC-CDM web site on 30/09/2013 and thus, was available in the public domain.

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

- (a) The registered PDD, including the approved revised monitoring plan and the corresponding validation opinion;
- (b) Previous verification reports, if any;
- (c) Previous monitoring reports, if any;
- (d) The applied monitoring methodology;
- (e) Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board;
- (f) Any other information and references relevant to the project activity's resulting emission reductions (e.g. IPCC reports, data on electricity generation in the national grid or laboratory analysis and national regulations).

## 2.2. Follow-up Interviews

On 16/10/2013, Bureau Veritas Certification performed a site visit and interviews with project stakeholders to confirm selected information and to resolve 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"> <li>➤ Project Design and implementation</li> <li>➤ Technical equipment, calibration and operation</li> <li>➤ Monitoring Plan and management procedures</li> <li>➤ Monitoring data</li> <li>➤ Data uncertainty and residual risks (QA/QC)</li> <li>➤ GHG Calculation</li> <li>➤ Environmental Impacts</li> <li>➤ Compliance with National Laws and Regulations</li> </ul>
O&M contractors	<ul style="list-style-type: none"> <li>➤ Metering system at the site</li> <li>➤ Technical equipment and operation</li> <li>➤ Monitoring</li> <li>➤ Data recording and archiving</li> <li>➤ Calibration of equipments</li> <li>➤ Data uncertainty and residual risks</li> </ul>





## 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 Lead Verifier 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 03 Corrective Action Requests and 01 Clarification Requests.

The CARs and CLs 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 previous validation/verification

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

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

Bureau Veritas Certification has performed a site visit and found that the Project has been put into operation and the electricity generated is supplied to NEWNE grid according to the signed



Power Purchase Agreement (PPA). 90nos of WTGs with a unit capacity of 0.6MW, providing a total installed capacity of 54MW has been in operation during the monitoring period.

## Metering System

There are 2 main meters one each at Line 1 & Line 2 at 220KV Amarsagar Sunstation of RVPNL and 2 backup meters one each at Line 1 & 2 at Temadarai Substation. The energy meters are used to measure and record the electricity exported and imported values by all the 90 WTGs along with other WTGs connected in the wind farm. These meters are of 0.2s class accuracy, which is an adequate level of accuracy for the metering purpose. Project participant provided records for selling the power units to the Ajmer Discom, Jaipur Discom & Jodhpur Discom in the form of break up energy sheet.

## 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.



Corresponding to the paragraph 228 of VVS version 5.0, Bureau Veritas Certification can confirm that:

- The implementation of the Project is consistent with the approved revised PDD.
- The Project is operated as per the approved revised PDD by the Project participant.

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

The verification team has verified the monitoring plan, including the data and parameters required to be monitored, measurement procedures, monitoring frequency and QC/QA procedures as described in the approved revised PDD.



Corresponding to the paragraph 232 of VVS version 05.0, 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 registered monitoring plan (235-236)

Monitoring of the project activity has been carried out in accordance with the monitoring plan contained in the approved revised PDD (Ref/1/).

The parameters required by the monitoring plan and the method in which the verification team has verified the information flow (from data generation, aggregation, to recording, calculation and reporting) for these parameters including the values in the monitoring reports are described below:

**Parameters Monitored:**

Net electricity supplied to the grid by the project activity during the year y ( $EG_{BL,y}$ ): This is a calculated parameter, and is the difference between the share of Electricity exported by the WTG's in the project activity monitored by the meters installed at Substation and the electricity imported by all the WTGs in the wind farm connected to meter installed at substation.

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 in the monitoring report are described below:

<i>Sr. no.</i>	<i>Parameter</i>	<i>Data information flow</i>
1.	Net electricity generation supplied to the grid by the Project activity. <b><math>EG_y</math></b>	<p>This is a calculated parameter, and is the difference between the share of Electricity exported by the WTG's in the project activity monitored by the meters installed at Substation and the electricity imported by all the WTGs in the wind farm connected to meter installed at substation.</p> $EG_y = \sum EG_{Export,y,M} - EG_{JMR, Import}$
2.	Electricity exported by project activity and non-project activity WTGs, as recorded by the main meters at the Amarsagar (state utility sub-station). ( <b><math>EG_{JMR, Export}</math></b> )	<p>The verification team noted that 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 exported by the entire wind farm is measured through a common set of meters.</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><i>Based on the above, the verification team concludes that the monitoring of electricity exported by all the WEGs in the wind farm is in line with the provision described in the monitoring plan.</i></p>
3.	Electricity imported by project activity and non-project activity WTGs as recorded by the main meter at the Amarsagar (state utility sub-station), <b><math>EG_{JMR, Import}</math></b>	<p>The verification team noted that 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 imported by the entire wind farm is measured through a common set of meters.</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><i>Based on the above, the verification team concludes that the monitoring of electricity imported by all the WEGs in the wind</i></p>

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		<i>farm is in line with the provision described in the monitoring plan.</i>
4.	Summation of Gross electricity export (Gross electricity generation by WTG) by all WTG of project activity and non project, as measured at the controller (LCS meter) at project site. ( $\sum EG_{\text{Controller},i}$ )	<p>The verification team noted that the electricity generation of all WEG's (project activity and non-project activity) has been monitored and recorded through LCS meters.</p> <p><i>Based on the above, the verification team concludes that the monitoring of electricity generated by all the WEGs connected to the substation is in line with the provision described in the monitoring plan.</i></p>
5.	Summation of Gross electricity export (Gross electricity generation by WTG) by all the WTGs (N number of WTGs) of sub-project (M) included in the project activity, as measured at the LCS where M is any sub project included in the project activity and N is the number of WTGs in a sub-project. ( $\sum EG_{\text{Controller}, N,M}$ )	<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>
(5)	Summation of Electricity export to the grid by all the sub-Projects included in the project activity. ( $\sum EG_{\text{Export},y,M}$ )	<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 at the pooling substation represents the electricity supplied 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 WTG in a particular month and</p>



		<p>sent to respective project owners. The break-up sheet is prepared on the basis on the basis of readings taken at WTG end as well as the pooling substation and the electricity exported is calculated as follows-</p> $[(\sum EG_{\text{Controller, N,M}} / \sum EG_{\text{Controller, i}}) \times EG_{\text{JMR, Export}}]$ <p>The value for this parameter is sourced from the monthly Generation break-up sheets prepared by the O&amp;M contractor which is based on the monthly JMR reading and the LCS reading. Project participant has provided copies of all the generation breakup-sheets for the current monitoring period. Validation team has further cross checked the value of <math>\sum EG_{\text{Export, y, M}}</math> from the invoices raised against the electricity sold to the Discoms .</p> <p><i>Based on the above, the verification team concludes that the monitoring of net electricity supplied from the grid by the project activity is in line with the provision described in the monitoring plan.</i></p>
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All records like joint meter reading statement, break up energy statement, Invoice raised by the Project participant on Ajmer, Jodhpur & Jaipur Discom, meter calibration reports, etc. related to the project activity operations are also well maintained at the head office of the Project Participant. The data was found to be recorded diligently.

The verification team has verified the values provided in the monitoring report and ER spreadsheet against the relevant documented evidences i.e. Monthly JMRs and monthly generation breakup sheet(Ref/10/) and found them to be consistent with the evidences

#### Parameters determined ex-ante:

EF<sub>y</sub> emission factor of the NEWNE grid – The emission factor for the entire crediting period of the Project activity has been determined ex-ante in the registered PDD (Ref/1/). The emission factor value of 0.90852 tCO<sub>2</sub>e/MWh used in the monitoring report has been verified against the registered PDD and found to be consistent.



Corresponding to the paragraph 235 and 236 of VVS version 05.0, 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 approved revised monitoring plan indicates the frequency of accuracy testing of the main and back up meters as once in a year. The energy meters of the project activity are calibrated and sealed by the third party in the presence of the Jaipur Discom/RRVPL representatives.

During the current monitoring period, the energy meters, used to measure the electricity, have been operating well and were duly calibrated. The calibration records are shown in Table 2 below.

Table 2 The calibration records of the meters

	Serial number	Accuracy	Calibration date		Validity	Next Due date of calibration
Main Meter Amarsagar	TNU00946	0.2S	19/03/2012	26/12/2012	Yes	25/12/2013
	TNU00945	0.2S				
Backup Meters Temdarai	RJB00052	0.2S	23/03/2012	28/12/2012	Yes	27/12/2013
	ABB00691	0.2S				

During the current monitoring period as evident from above, the meters were calibrated well within a span of one year and the calibration reports (Ref/12/-/13/) of all the meters indicate that all meters were within the permissible limits of error.

Verification team further observed that there have been no case of meter failure or meter change during the current verification period and hence confirms there have been no instances of data uncertainty in the current verification period.



Corresponding to the paragraph 243 of VVS version 05.0, Bureau Veritas Certification can confirm that:

- The calibration is conducted at the frequency as specified by the monitoring plan contained in the approved revised PDD during current verification period.

### 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 the Emission Reductions is the net electricity supplied to the grid by the project activity. 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 02 (Ref/3/).

\* Post current verification period which is yet to occur



As per the methodology ACM0002 Version 4.0 and the approved revised PDD, the emission reductions for the Project are calculated as the baseline emissions minus the project emissions and leakage. Hence the emission reduction is determined by the following formula:

$$ER_y = BE_y - PE_y - L_y$$

Where,

$ER_y$ : Emission reductions

$BE_y$ : Baseline emissions

$PE_y$ : Project emissions

$L_y$ : Emissions due to leakage

### Baseline emissions

The baseline emissions are the baseline emission factor times the net electricity supplied to the grid. Therefore,

$$BE_y = EF_y * EG_y$$

$EF_y$ : GHG emission factor of the NEWNE, calculated ex-ante in the registered PDD as 0.90852 tCO<sub>2</sub>e/MWh

$EG_y$ : Net electricity supplied to the grid, 53,679.969 MWh

The baseline emissions of the Project are calculated as:

$$BE_y = EF_y * EG_y = 0.90852 \text{ tCO}_2\text{e/MWh} * 53,679.969 \text{ MWh} = 48,769 \text{ tCO}_2\text{e}$$

### Project emissions

The Project is a wind energy project, thus according to ACM0002 Version 4.0 the project emissions are zero.

### Leakage emissions

Since there is no transfer of equipment involved, no leakage needs to be considered according to ACM0002 Version 4.0

### Emission reductions

The emission reductions during the monitoring period from 01/01/2013 to 31/08/2013 are calculated as:

$$ER_y = BE_y - PE_y - L_y = 48,769 - 0 - 0 = 48,769 \text{ tCO}_2\text{e}$$





## Comparison of ERs

The annual estimated emission reductions are 92,849 tCO<sub>2</sub>e as per the registered PDD. The actual operation days of the Project in the monitoring period are 243 days. The corresponding estimate in the monitoring period are 61,815(=92,849\*243/365) tCO<sub>2</sub>e. The actual emission reductions are 21.1% less than the estimated value in the monitoring period.

The variation is due to wind availability leading to low plant load factor and it is deemed to be reasonable.



Corresponding to the paragraph 246 of VVS version 05.0, Bureau Veritas Certification can confirm that:

- Data used for the determination of the emission reductions are available and monitored in accordance with the monitoring plan contained in the approved revised PDD.
- Information and data provided in the monitoring report have been cross-checked with invoices raised to discoms for the electricity sold.
- 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 4<sup>th</sup> periodic verification of the 'Bundled Wind power project in Jaisalmer (Rajasthan in India) managed by Enercon (India) Ltd.', CDM Registration Number 0310, which is located in Soda Village of Jaisalmer District of Rajasthan State in India and applying the methodology ACM0002 version 4. 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 and 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 emissions reductions of the project on the basis set out within the project monitoring plan indicated in the approved revised monitoring plan. 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 verified the Project Monitoring Report version 02 for the reporting period as indicated below. Bureau Veritas Certification confirms that the project is implemented as described in validated and approved revised project design documents. Installed equipment being essential for generating emission reduction runs reliably and is 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 reduction is calculated without material misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported and related to the validated and registered project baseline and 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	: From 01/01/2013 to 31/08/2013
Baseline Emissions	: 48,769 tCO <sub>2</sub> equivalent
Project Emission	: 0 tCO <sub>2</sub> equivalent
Leakage Emissions	: 0 tCO <sub>2</sub> equivalent
Emission Reductions	: 48,769 tCO <sub>2</sub> equivalent

**Sanjay Patankar**  
Internal Technical Reviewer  
Mumbai, India  
17/12/2013

**Anurag Juyal**  
Lead Verifier  
Noida, India  
17/12/2013



## 5. REFERENCES

### Documents Reviewed:

- /1/ Approved Revised PDD, Version 6.0, dated 26/04/2012, UNFCCC ref no 0310
- /2/ Webhosted Monitoring Report, Version 01, dated 01/10/2013
- /3/ Final Monitoring Report, version 2, dated 15/11/2013
- /4/ Emission Reduction Calculation Sheet
- /5/ Clean Development Mechanism Validation and Verification Standard, Version 5.0, EB 75
- /6/ Monitoring Report Form version 03.1
- /7/ Guideline for completing the monitoring report form (CDM-MR) – Version 03.2, EB 70, Annex 11
- /8/ Grid connected renewable energy generation, ACM0002, version 4.0
- /9/ CEA CO<sub>2</sub> database
- /10/ Break Up Energy Sheet, Joint meter readings for all the months during the current verification period
- /11/ Invoice issued by the Project Participant for all months in the current verification period based on the Break up energy sheet
- /12/ Calibration reports of the main meters at Amarsagar Substation
  - **SI. No TNU00945** Ref no. YMPL/214135/41759 dated 19/03/2012 and C&IJ/CAL/S/12-12/066 dated 26/12/2012 (prior to current verification period)
  - **SI. No TNU00946** Ref no. YMPL/214135/41756 dated 19/03/2012 and C&IJ/CAL/S/12-12/069 dated 26/12/2012
- /13/ Calibration reports of the backup meter at Temadarai Substation
  - **SI. No ABB00691** Ref no. YMPL/215151/41884 dated 23/03/2012 and C&IJ/CAL/S/12-12/105 dated 28/12/2012
  - **SI. No RJB00052** Ref no. YMPL/214151/41868 dated 23/03/2012 and C&IJ/CAL/S/12-12/106 dated 28/12/2012

### Persons interviewed:

List persons interviewed during the verification or persons that contributed with other information that are not included in the documents listed above.

- /1/ Mr. Saujanaya Kumar, Consultant, Wind World (india) limited
- /2/ Ms. Anushree Mishra, Consultant, Wind World (India) Limited
- /3/ Mr. Jitendra, Supervisor, Wind World (India) Limited



## 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 around 6 years of experience in the field of climate change services. He is working in Bureau Veritas Certification (India) Pvt. Ltd. as 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>
Mr. Prabhavtar Singh	Bureau Veritas Certification, India	<p><i>Team Member, Climate Change Lead Verifier</i></p> <p>He has a Bachelors of Technology degree in Mechanical Engineering and Masters of Business Administration degree in Energy and Finance. Has overall experience of more than 5 years, including 2 years in manufacturing industry in functions like Quality, Process validation and QMS and 3 years in the field of CDM and VCS. Has worked on various Wind, Hydro Natural gas base CCPP and Biomass CDM projects. He has undergone training related to Clean Development Mechanism. He is working in Bureau Veritas Certification (India) Pvt. Ltd. as Verifier – Climate Change and currently involved in validation and verification of CDM projects</p>
Mr. Sanjay Patankar	Bureau Veritas Certification, India	<p>Internal Technical Reviewer, Climate Change Lead Verifier</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 &amp; die design, improvements in the production shop, quality assurance &amp; control and systems planning and implementation, including ISO 9001 based quality management systems. Working for the last 3 years in Bureau Veritas Certification (India) Pvt. Ltd. as Lead Auditor for ISO 9001, 14001 and OHSAS 18001 standards/specifications.</p>

## VERIFICATION REPORT

## APPENDIX A: CDM PROJECT VERIFICATION PROTOCOL

**Table 1 Verification requirements based on VVS version 05.0 (EB 75 Annex 5), PS version 5.0 (EB 75 Annex 4), PCP version 03.1 (EB 70 Annex 4), and Guidelines for completing the Monitoring Report Form version 4.0 (EB 75 Annex 7)**

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
<b>Part I Cover Page</b>					
(a) Is the title of the project activity provided?	MR		The title of the project activity has been provided as <i>“Bundled Wind power project in Jaisalmer (Rajasthan in India) managed by Enercon (India) Ltd.</i>	OK	OK
(b) Is the reference number of the project activity provided?	MR		Reference number of the project activity has been provided as 0310	OK	OK
(c) Is the version number of the monitoring report indicated?	MR		Version number is indicated as 01.	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 provided as 19/09/2013.	OK	OK
(e) Is the registration date of the project activity provided in DD/MM/YYYY format?	MR		Registration date of the project activity has been provided as 25/09/2006.	OK	OK
(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 4 <sup>th</sup> and the monitoring period is provided as 01/01/2013 – 31/08/2013(both first & last days included)	OK	OK
(g) Are project participants indicated?	MR		Project participant has been indicated as “ Wind World (India) Limited”	OK	OK
(h) Is the host party (ies) indicated?	MR		Host party has been indicated as Government of India.	OK	OK
(i) Are the sectoral scope(s) and applied methodology (ies) indicated?	MR		Yes , Sectoral scope and applied methodology are correctly mentioned	OK	OK



## VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
(j) Is the estimated amount of GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period in the registered PDD indicated?	MR		Estimated amount of GHG emission reductions for this monitoring period has been indicated as 61,815 tCO <sub>2</sub> e.	OK	OK
(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 48,769 tCO <sub>2</sub> 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		As per the requirement of EB 75 Annex 7, the actual GHG emission reductions achieved during the period up to 31 December 2012 during the period from 1 January 2013 onwards are not indicated on the cover page of webhosted monitoring report	CAR 01	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		Refer CAR 01 raised in section above	-	-
<b>Part II Monitoring Report</b>					
<b>A. Description of project activity</b>					
<b>A.1 Purpose and general description of project activity</b>					
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



## VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
A.1.2 Does this description include:					
A.1.2.1 Purpose of the project activity and the measures taken for GHG emission reductions or net anthropogenic GHG removals by sinks?	MR		Purpose of the project activity and the measures taken for GHG emission reductions are provided in the MR.	OK	OK
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		Commissioning dates of the WECs is provided in the MR.	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
<b>A.2 Location of project activity</b>					
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 coordinated of each wind turbine is presented . The village , Taluka & District is also provided	OK	OK
<b>A.3 Parties and project participant(s)</b>					
A.3.1 Is the Party (ies) and project participant(s) involved in the project activity listed in the provided table?	MR		The name of the project participant in registered PDD is Enercon (India) Limited, whereas the name of project participant has been changed to Wind World (India) Limited in the monitoring report.	CAR 02	OK
<b>A.4 Reference of applied methodology</b>					



## VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
A.4.1 Is the exact reference (number, title, version) of the methodology (ies) indicated?	MR		The exact reference of the methodology has been indicated as : Number – ACM0002  Title – <i>Consolidated methodology for grid-connected electricity generation from renewable sources,</i>  Version – 04	OK	OK
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		Yes, the reference of the tool to which the applied methodology refers is indicated in section A.4 of monitoring report.	OK	OK
<b>A.5 Crediting period of project activity</b>					
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>B. Implementation of project activity</b>					
<b>B.1 Description of implemented registered project activity</b>					
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 have 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	PS	191(b)	Yes , information about the commissioning date (start of actual operation) of the project activity is provided.	Ok	OK





## VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
periods, etc.) provided?					
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	There were no FARs 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 registered 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 registered 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 registered PDD. The same was confirmed during physical site visit on 16/10/2013 by validation team.	Ok	OK
B.1.8 Was an on-site visit conducted?	VVS	227	An on-site visit was conducted on 16/10/2013 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 16/10/2013 by a single member verification team.	OK	OK
<b>B.2 Post registration changes</b>					
B.2.1 Temporary deviations from registered monitoring plan or applied methodology					



## VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.2.1.1 Is it indicated whether any temporary deviations have been applied during this monitoring period?	MR		Not applicable	OK	OK
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>B.2.2 Corrections</b>					
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		Yes , it is indicated that corrections to project information or have been approved prior to this monitoring period.	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	MR		Yes	OK	OK



## VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
provided? Otherwise, are the version number and the completion date of the revised PDD provided?					
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		Yes, it is indicated that the permanent changes from the registered monitoring plan have been approved.	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		Yes	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		Yes , it is indicated that the changes to the project design of the project activity have been approved.	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	MR		Yes	OK	OK



## VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
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?					
<b>B.2.5 Changes to start date of crediting period</b>					
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>B.2.6 Types of changes specific to afforestation or reforestation project activity</b>					
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



## VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
<b>C. Description of monitoring system</b>					
<b>C.1 General requirements</b>					
C.1.1 Have project participants described the monitoring system and provided line diagrams (graphical schemes) showing all relevant monitoring points?	MR PS	193	Yes, the monitoring system has been described and the line diagram showing all the relevant monitoring points is also provided.	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	Yes, the description of data collection procedure, organizational structure, roles and responsibilities of personnel, and emergency procedures for the monitoring system is provided.	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	VVS	234(a)	Yes, the monitoring plan has been properly	OK	OK



## VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
participants?			implemented in line with the monitoring plan in registered PDD.		
C.1.6 Have all parameters stated in the monitoring plan and relevant Board decisions been monitored and updated as applicable, including:	VVS	234(b)		-	-
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)	Leakages are 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)	In section C of monitoring report the management and operational system along-with the roles and responsibilities are provided.	OK	OK
<b>D. Data and parameters</b>					
<b>D.1 Data and parameters fixed ex ante or at renewal of crediting period</b>					
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



## VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
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 identified?	PS	195(d)	Source of data has been provided in the MR.	OK	OK
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
<b>D.2 Data and parameters monitored</b>					
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		Yes, value of the applicable monitored parameter is provided in the table.	OK	OK
D.2.3 Are the values of the monitored parameter for the purpose of calculating GHG	PS	195(a)	Yes, the values of the monitored parameter for the purpose of calculating GHG emission reductions are	OK	OK



## VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
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 applied?			provided.		
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)	Yes, a reference ( Section C Table 3)to clear description of the monitoring equipment (energy meter ) including details of accuracy class , type & make are provided .	OK	OK
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)	Yes	OK	OK
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	Yes	OK	OK
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	VVS	238			





## VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
consideration (i.e. the results of delayed calibration are available), is the following conservative approach adopted in the calculation of emission reductions:					
D.2.7.1 Applying the maximum permissible error of the instrument to the measured values taken during the period between the scheduled date of calibration and the actual date of calibration, 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?	VVS	238(a)	Not Applicable		
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)	Not Applicable		
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)	Not Applicable	-	-
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)	Not Applicable	-	-
D.2.9 In cases where the results of the delayed	VVS	240	Not Applicable	-	-



## VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
calibration are not available, or the calibration has not been conducted at the time of verification, prior to finalizing verification, were the project participants 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	Not Applicable	-	-
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	The calibration frequency is in accordance with the registered monitoring plan.	OK	OK



## VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
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 provided.	OK	OK
D.2.13 Are monitoring results consistently recorded as per approved frequency?	VVS	234(d)	Yes, monitoring results are recorded on a monthly basis, which is in line with the applied methodology and the revised PDD.	OK	OK
D.2.14 Is the source of data (e.g. logbooks, daily records, surveys, etc.) provide and/or identified?	PS	195(d)	OK	OK	
D.2.15 Where relevant is the calculation method of the parameter provided?	PS	195(e)	Yes ,	OK	OK
D.2.16 Are the QA/QC procedures applied described (if applicable per monitoring plan)?	PS	195(f)	It has been mentioned in the webhosted Monitoring report that the calibration of the main meters & check meters were done on 26/12/2012 & 28/12/2012 respectively. However the documentary evidence for the same is not provided.	CL 01	
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)	Yes	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



## VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
<b>D.3 Implementation of sampling plan</b>					
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
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
<b>E. Calculation of emission reductions or GHG removals by sinks</b>					
<b>E.1 Calculation of baseline emissions or baseline net GHG removals by sinks</b>					
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)	Yes, the sample calculations for all formulae used and calculation of baseline emissions, applying actual values are provided	OK	OK
E.1.2 Are the electronic spreadsheets to present full calculations in the monitoring report attached?	MR		Yes, electronic spreadsheets to present full calculations in the monitoring report are provided and are verified by verification team.	OK	OK



## VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
<b>E.2 Calculation of project emissions or actual net GHG removals by sinks</b>					
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
<b>E.3 Calculation of leakage</b>					
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
<b>E.4 Summary of calculation of emission reductions or net anthropogenic GHG removals by sinks</b>					
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 generation report, as recorded at the controller of WTG, provided by the O&M service provided for the WTG in the project activity, is not	CAR 03	OK



## VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			provided		
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)	Refer CAR raised in E.4.2	-	-
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 the formulae used are in line with registered PDD.	OK	OK
E.4.5 Have any assumptions used in emission calculations been justified?	VVS	245(d)	Yes	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
<b>E.5 Comparison of actual emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD</b>					
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	Comparison of actual GHG emission reductions with PDD estimates has been provided. Actual GHG ERs are observed to be less than the PDD estimates.	OK	OK
<b>E.6 Remarks on difference from estimated</b>					



## VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
<b>value in registered PDD</b>					
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	The ERs have not increased in accordance with PDD estimates and hence no explanation is required.	OK	OK
<b>E.7 Actual emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards</b>					
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 (1st commitment period); (b) From 1 January 2013 onwards.	MR		The actual values of ER achieved from 01/01/2013 to the end of monitoring period are provided in table presented in section E.7.	OK	OK
E.7.2 Is it ensured that the achieved GHG emission reductions or net anthropogenic	MR		Yes	OK	OK



## VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
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?					





## 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
<b><u>CAR 01</u></b> As per the requirement of EB 75 Annex 7, the actual GHG emission reductions achieved during the period up to 31 December 2012 during the period from 1 January 2013 onwards are not indicated on the cover page of webhosted monitoring report	Part 1 , L	Correction has been made on cover page of MR in line with the requirement of EB 75 Annex 7.	The cover page of the PDD is revised to include the information of emission reduction during this monitoring period till 31.12.2012 and 01.01.2013 onwards. This meets the requirements of requirement of EB 75 Annex 7. Hence CAR 01 is closed.
<b><u>CAR 02</u></b> The name of the project participant in registered PDD is Enercon (India) Limited, whereas the name of project participant has been changed to Wind World (India) Limited in the monitoring report.	A.3.1	We would like to submit to DOE that with effect from 01/01/2013 name of Enercon (India) Limited has been changed to 'Wind World (India) Limited'.  Certificate of incorporation towards the change of name of company is being provided to DOE.  Further copy of revised HCA dated 26 July 2013 is being submitted to DOE for reference.	PP has clarified that the name of the project participant has been changed WEF 01/01/2013, the copy of Name change certificate issued by Registrar of Companies India, letter of approval from DNA of India with changes Project participant name has been provided to validation team. Based on the documentary review CAR 02 is closed.
<b><u>CL 01</u></b> It has been mentioned in the webhosted Monitoring report that the calibration of the main meters & check meters were done on 26/12/2012 & 28/12/2012 respectively.	D.2.16	Copy of calibration certificate dated 26/12/2012 & 28/12/2012 is being provided to DOE along with response.	PP has provided the copies of calibration reports C&IJ/CAL/S/12-12/066 dated 26/12/2012, C&IJ/CAL/S/12-



## 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
However the documentary evidence for the same is not provided.			12/069 dated 26/12/2012, C&IJ/CAL/S/12-12/105 dated 28/12/2012 and C&IJ/CAL/S/12-12/106 dated 28/12/2012. Hence CL 02 is closed.
<b><u>CAR 03</u></b> Monthly generation report, as recorded at the controller of WTG, provided by the O&M service provided for the WTG in the project activity, is not provided.	E.4.2	DOE is requested to refer CER calculation sheet, tab 'Panel Gen.2013' for monthly generation data for individual customers as sourced from SCADA.	The gross electricity generated by the WTGs in the project activity are recorded by controller installed in WTG ,the SCADA system also records the gross generation from each WTG . The ER sheet provided the data extracted from SCADA for the monthly generation of all WTG in project activity. CAR 03 is closed.