VERIFICATION & CERTIFICATION REPORT

VAAYU (INDIA) POWER CORPORATION PRIVATE LIMITED

VAAYU INDIA WIND POWER PROJECT IN TAMILNADU

(UN Ref No. 4930)

Monitoring Period
(19th July 2011 to 17th February 2012)

REPORT NO.

CDM.12.VER.012.MP01

KBS Certification Services Pvt. Ltd.
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Date of this issue: 07/07/2012	KBS Ref. No.: CDM.12.VER.012 MP01
Project Title:	Vaayu India Wind Power Project in Tamilnadu
Organization:	KBS Certification Services Pvt. Ltd.
Client:	Vaayu (India) Power Corporation Private Limited
Monitoring Period:	19/07/2011 to 17/02/2012 (both dates included)

Summary:

KBS Certification Services Pvt. Ltd. has performed the first verification of the CDM project Vaayu India Wind Power Project in Tamilnadu and UNFCCC Ref. Number 4930. The verification includes confirming the implementation of the monitoring plan of the registered PDD and the application of the monitoring methodology as per ACM0002, Version 12.1.0, 17th September 2010. A site visit was conducted to check the implementation of registered monitoring plan and verify the data submitted in the monitoring report. KBS confirms the following has been reviewed;

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

KBS Certification Services Pvt. Ltd. confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements.

Based on the information seen and evaluated we confirm that the implementation of the project has resulted in 27,128 tCO2e emission reductions during period 19/07/2011 up to 17/02/2012.

Subject Group: CDM Verification	Sectoral Scope: 1 (TA 1.2)		Methodology: ACM0002, Version 12.1.0
Verification Team:			**Monitoring report:**
Team Leader	Sanjay Kandari		First version 16/04/2012
Verifier	Vijay Mathew		Final version 07/07/2012
Local Expert	Sanjay Kandari		
Technical Expert (TA 01.2)	Sanjay Kandari		**Verification status:**
Technical Reviewer Team:	**Manager T&C**		☐ Findings not closed.
Date: 09/07/2012	Date: 10/07/2012		☐ Draft verification opinion
TR (TA1.2): Kaviraj Singh	Ashok Kumar Gautam		☒ Final verification opinion
Authorized Signatory:			**Indexing Terms**
Date	10/07/2012		☒ No distribution without permission from client
Managing Director	Kaushal Goyal		☐ Limited distribution
Revision history:			☐ Unrestricted distribution
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07/06/2012	0	36	
28/06/2012	1	35	
04/07/2012	2	33	
07/07/2012	3	30	

Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CO2	Carbon dioxide
CO2eq	Carbon dioxide equivalent
CL	Clarification Request
DISCOM	Distribution Companies
EB	Executive Board
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse gas(es)
JMR	Joint Meter Reading
kV	Kilo Volt
kW	Kilo Watt
kWh	Kilo Watt Hour
MP	Monitoring Plan
MR	Monitoring Report
MW	Mega Watt
MWh	Mega Watt Hour
O&M	Operation and Maintenance
PA	Project Activity
PDD	Project Design Document
PPA	Power Purchase Agreement
PP	Project Participant
QA/QC	Quality Assurance / Quality Control
TNEB	Tamil Nadu Electricity Board
UNFCCC	United Nations Framework Convention on Climate Change
XLS	Emission Reduction Calculation Spread Sheet
WEG	Wind Energy Generator
WTG	Wind Turbine Generator

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1. INTRODUCTION

1.1 Objective

KBS has been commissioned by "Vaayu (India) Power Corporation Private Limited"to perform an independent verification of its registered CDM project, "Vaayu India Wind Power Project in Tamilnadu", UNFCCC ref. no. 4930for the reported GHG emission reductions for the given monitoring period 19/07/2011 up to 17/02/2012. The CDM projects must undergo independent third party verification and certification of emission reductions as the basis for issuance of Certified Emission Reductions (CERs).

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

- The project activity has been implemented and operated as per the registered PDD and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place;
- Monitoring report and other supporting documents are complete;
- The actual monitoring systems & procedures and monitoring report conforms with the requirements of the approved monitoring plan and the approved monitoring methodology;
- The data is recorded and stored as per the monitoring methodology and approved monitoring plan.

1.2 Scope

The scope of the verification is the independent and objective review and ex post determination of the monitored reductions in GHG emission by the project activity. The verification is based on the registered PDD and the monitoring report. The project is assessed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures and related rules and guidance.

KBS has, based on the recommendations in the latest version of Validation and Verification Manual, employed a risk-based approach in the verification, focusing on the identification of significant reporting risks and the reliability of project monitoring.

1.3 Description of the Project Activity

Project Parties:	India
Title of project activity:	Vaayu India Wind Power Project in Tamilnadu
UNFCCC registration No:	UNFCCC registration No. 4930
Registration date:	19/07/2011
Applied methodology:	ACM0002, Version 12.1.0.
Start date of crediting period:	19/07/2011
Project Participants:	Vaayu (India) Power Corporation Private Limited
Location of the project activity:	Vagaikulam, Kuruchikulam, Ettankulam, Kalakudi, Muthammalpuram, Ukkirankottai villages, Tirunelveli district, Southern Region/Tamilnadu State of India.

The project activity comprises installation and operation of 63 WTGs of capacity 800 kW each aggregating a total capacity of 50.4 MW in the district Tirunelveli district in Tamilnadu. The electricity produced from the project is exported to the Sothern grid/17/ of India thereby replacing the equivalent amount of energy generated through fossil fuel based power plants connected to grid. The project started generating commercial power since 29/09/2010/05/ and the entire commissioning of the project activity was completed on 11/07/2011/05/. During the current monitoring period the emission reduction achieved are 27128 tCO_{2e}.

2. METHODOLOGY

KBS follows a risk/rule based verification approach, wherein a desk review of the project documentation is undertaken, which is followed by an onsite visit by the members of verification team. The verification protocol is filled by the verification team that is based on standard auditing practices and VVM Version 01.2, to capture the applicable CDM requirements. The verification protocol provides transparent means to record the observations by the verification team members and the nonconformities, if any. The verification protocol is an internal document, and available on request.

Duration of verification

Verification Contract	10/04/2012
Publication of MR	24/04/2012
On site verification	17/05/2012 &18/05/2012
Draft Verification Report	07/06/2012
Final Verification Report	07/07/2012

2.1 Review of Documentation

A desk review is undertaken, involving but not limited to,

- A review of the data and information presented to verify their completeness;
- A review of the monitoring plan and monitoring methodology, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures;
- An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

The list of document reviewed is included in the section 'References'

2.2 Site Visits

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

- An assessment of the implementation and operation of the proposed CDM project activity as per the registered PDD;
- A review of information flows for generating, aggregating and reporting the monitoring parameters;
- Interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the approved monitoring plan;
- A cross-check between information provided in the monitoring report and data from other sources such as plant log books, inventories, purchase records or similar data sources;
- A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PDD and the selected methodology;
- A review of calculations and assumptions made in determining the GHG data and emission reductions;
- An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

The site visit for this verification assessment was undertaken by Mr. Sanjay Kandari (Team Leader) &Mr. Vijay Mathew (Verifier) and details are mentioned below;

Location	Tirunelveli	
Dates	17/05/2012 &18/05/2012	
Key points discussed	**Name of person, interviewed**	**Designation, Organization**
Operational data	Mr. T. Pradeep	Assistant Manager Enercon (Operation)
Calibration	Mr.Sagayaprabhu	Assistant Engineer Enercon
Data collection	Mr.Jagan	Engineer Enercon
QA/QC procedures	N. Senthilnel	Deputy Manager Enercon
Calculation of ERs	Mr.BhupendraVerma	Assistant Manager Enercon
CDM requirements	Mr.BhupendraVerma	Assistant Manager Enercon

2.3 Reporting of Findings

During the course of verification the findings may be raised as under;

CAR is raised if one of the following occurs:

- Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impair the estimate of emission reductions;
- Issues identified in a FAR during validation to be verified during verification have not been resolved by the project participants.

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

All CARs and CLs raised during verification shall be resolved prior to submitting a request for issuance.FAR is raised if the monitoring and reporting require attention and/or adjustment for the next verification period.The verification report contains all CARs, CLs and FARs raised during this verification.

2.4 Verification Assessment

Based on the desk review and site visit the Team Leader fills in the verification protocol to identify and record the findings in the context of the project activity. The findings are communicated to the client. The project documentations, including responses to the findings are reviewed by the Team Leader in consultation with team members, as appropriate. The Team Leader prepares the draft verification report subject to closure or non closure of the findings.

It is the responsibility of the Team Leader to confirm that the verification assessment has been undertaken in accordance with the procedures adopted by KBS as well as in accordance with the standards, procedures, guidance and decision established by CDM EB and related bodies.

2.5 Internal Quality Control

The draft verification report prepared by Team Leader is reviewed by an independent technical reviewer (having competence of relevant technical area himself/herself or through an independent technical area expert) to confirm the internal procedures established by KBS are duly followed and the verification report/opinion is reached in an objective manner and complies with the applicable CDM requirements.

The independent technical reviewer may approve or reject the draft verification report. The findings may be identified at this stage, which needs to be satisfactorily resolved, before the request for issuance is submitted to UNFCCC. The final decision is taken by the Manager Technical and Certification. The Technical Reviewer and Manager T&C can be same person.

The final decision is authorized by Managing Director, KBS once the report is approved by the Manager T&C.

3. VERIFICATION FINDINGS

3.1 Project Implementation

Discussion:

During the verification a site visit/04/ was carried out. On the basis of this site visit and the reviewed project documentation it can be confirmed that w.r.t. the realized technology, the project equipment, as well as the monitoring and metering equipment, the project has been implemented and operated as described in the registered PDD/03/.

All the 63 WTGs involved in the project activity are installed at locations, i.eVagaikulam, Kuruchikulam, Ettankulam, Kalakudi, Muthammalpuram, Ukkirankottai villages in Tirunelveli district in Indian State of Tamil Nadu as described in the registered PDD/03/. The project started generating commercial power since 29/09/2010/05/ and commissioning of the project activity was completed on 11/07/2011/05/. The commissioning certificates/05/ of all the WTGs were verified by the verification team and found to be appropriate and in line with the information provided in the MR/02/ and registered PDD/03/. The monitoring plan required for the ex-ante estimation of the emission reduction is also implemented at the project site as per the registered monitoring plan/03/.The energy meters were found to be installed at the respective places during onsite verification conducted by the verification team. The WTG rated capacity, location/identification number, make, meter serial number and make etc. were verified from the name plates/04/ and found to be in order. The power generated from the project activity has been sold to the southern grid of India in line to the registered PDD, the PPA/17/and invoices/16/raisedby project proponent to regional electricity board were verified to confirm the same.

The project proponent has entered into a contract with "Enercon (India) Ltd." for the O&M service/06/. Enercon India Ltd has deployed the operation and maintenance team at project site for the successful functioning of the WTGs and data recording for the emission reduction calculation. The O&M team personals were interviewed/04/ during onsite verification to confirm the monitoring procedure.

The details of commissioning of each WTG verified are presented in the below table:

Table 1: Details of Commissioning

S. No.	WEG S.C. NO	Location No.	No. & Capacity	Commissioning Date	Reference Number
1	3376	V134, V137, V139&V141	4 X 800 kW	29/9/2010	SC.No.3376/R.No. 3261/10
		V123,V129,V125,V127&V107	5 X 800 kW	02/03/2011	SC.No.3376/R.No. 5627/11
		V164 & V166	2 X 800 kW	11/03/2011	SC.No.3376/R.No. 5628/11
2	3461	V130	1 X 800 kW	28/12/2010	SC.No.3461/R.No. 4919/10
3	3462	V132	1 X 800 kW	28/12/2010	SC.No.3462/R.No. 4920/10
4	3463	V119	1 X 800 kW	28/12/2010	SC.No.3463/R.No. 4921/10
5	3464	V 120	1 X 800 kW	28/12/2010	SC.No.3463/R.No. 4922/10
6	3465	V 108	1 X 800 kW	28/12/2010	SC.No.3463/R.No. 4923/10
7	3466	V109	1 X 800 kW	28/12/2010	SC.No.3466/R.No. 4924/10
8	3467	V110	1 X 800 kW	28/12/2010	SC.No.3267/R.No. 4925/10

9	3470	V147 &V145	2X 800 kW	31/12/2010	SC.No.3470/R.No. 4926/10
10	3500	V106	1 X 800 kW	18/03/2011	SC.No.3500/R.No. 017/11
11	3501	V94	1 X 800 kW	18/03/2011	SC.No.3501/R.No. 018/11
12	3502	V63	1 X 800 kW	18/03/2011	SC.No.3502/R.No. 019/11
13	3503	V74	1 X 800 kW	18/03/2011	SC.No.3502/R.No. 020/11
14	3504	V49	1 X 800 kW	18/03/2011	SC.No.3504/R.No. 021/11
15	3505	V48	1 X 800 kW	18/03/2011	SC.No.3505/R.No. 022/11
16	3506	V58	1 X 800 kW	18/03/2011	SC.No.3506/R.No. 023/11
17	3507	V59	1 X 800 kW	18/03/2011	SC.No.3507/R.No. 024/11
18	3508	V60	1 X 800 kW	18/03/2011	SC.No.3508/R.No. 025/11
19	3509	V72 & V73	2X 800 kW	18/03/2011	SC.No.3509/R.No. 026/11
20	3510	7	1 X 800 kW	18/03/2011	SC.No.3510/R.No. 027/11
20	3511	8	1 X 800 kW	18/03/2011	SC.No.3510/R.No. 028/11
21	3512	V90	1 X 800 kW	18/03/2011	SC.No.3510/R.No. 029/11
23	3513	V100	1 X 800 kW	18/03/2011	SC.No.3513/R.No. 137/11
24	3514	V101	1 X 800 kW	18/03/2011	SC.No.3514/R.No. 138/11
25	3515	V116	1 X 800 kW	18/03/2011	SC.No.3515/R.No. 030/11
26	3515	V116	1 X 800 kW	18/03/2011	SC.No.3516/R.No. 031/11
27	3517	V165	1 X 800 kW	18/03/2011	SC.No.3517/R.No. 032/11
28	3518	V104	1 X 800 kW	18/03/2011	SC.No.3518/R.No. 033/11
29	3519	V105	1 X 800 kW	18/03/2011	SC.No.3519/R.No. 034/11
30	3528	V114	1 X 800 kW	22/03/2011	SC.No.3528/R.No. 035/11
31	3768	V51	1 X 800 kW	01/07/2011	SC.No.3768/R.No. 1452/11
32	3769	165	1 X 800 kW	01/07/2011	SC.No.3769/R.No. 1453/11
33	3770	163	1 X 800 kW	01/07/2011	SC.No.3770/R.No. 1454/11
34	3771	167	1 X 800 kW	01/07/2011	SC.No.3771/R.No. 1455/11
35	3772	181	1 X 800 kW	01/07/2011	SC.No.3772/R.No. 1456/11
36	3773	180	1 X 800 kW	01/07/2011	SC.No.3773/R.No. 1457/11
37	3774	155	1 X 800 kW	01/07/2011	SC.No.3774/R.No. 1458/11
38	3775	179	1 X 800 kW	01/07/2011	SC.No.3775/R.No. 1530/11
39	3776	153	1 X 800	01/07/2011	SC.No.3776/R.No.

			kW		1531/11
40	3777	154	1 X 800 kW	01/07/2011	SC.No.3777/R.No. 1532/11
41	3778	156	1 X 800 kW	01/07/2011	SC.No.3778/R.No. 1459/11
42	3779	158	1 X 800 kW	01/07/2011	SC.No.3779/R.No.1460/11
43	3780	157	1 X 800 kW	01/07/2011	SC.No.3780/R.No. 1461/11
44	3781	150	1 X 800 kW	01/07/2011	SC.No.3781/R.No. 1462/11
45	3782	151	1 X 800 kW	01/07/2011	SC.No.3782/R.No. 1463/11
46	3783	W23	1 X 800 kW	01/07/2011	SC.No.3783/R.No. 1464/11
47	3783	149	1 X 800 kW	01/07/2011	SC.No.3783/R.No. 1465/11
48	3785	146	1 X 800 kW	01/07/2011	SC.No.3785/R.No. 1466/11
49	3789	147	1 X 800 kW	11/07/2011	SC.No.3789/R.No. 1533/11
50	3790	159	1 X 800 kW	11/07/2011	SC.No.3790/R.No. 1534/11
51	3791	160	1 X 800 kW	11/07/2011	SC.No.3791/R.No. 1535/11

Findings:

CL 01 was raised and successfully closed; refer section 07 for the details of finding.

Opinion:

Based on the site visit and documents review it can be concluded that:

(a)The project is implemented as per the registered PDD, all the WTGs were commissioned between 29/09/2010 and 11/07/2011.The commissioning certificates/5/ were verified to confirm the same.

(b) The actual operation of the proposed CDM project activity is in line to the registered PDD/3/,the power generated from the project activity was sold to the southern grid. The PPA/17/ and invoice/16/ raised by PP to DISCOM were verified to confirm the same

(c) No approvals of the deviation, request for revision in monitoring plan, request of notification or request for approval of changes from the project activity as described in the registered PDD/3/were requested.

3.2 Compliance of Monitoring Plan with the Monitoring Methodology

Discussion:

The monitoring system and all applied procedures are in compliance to the applied methodology ACM 0002, Version 12.1.0/08/ and monitoring plan of the registered PDD/03/. The applied monitoring methodology requires monitoring the parameter i.e., Quantity of net electricity generation supplied to the grid in year y by the project plant/unit that has been added under the project activity

As per the monitoring plan of the registered PDD/03/, four parameters are identified which need to be monitored for the emission reduction calculation during the crediting period. The parameters which are to be monitored are as follows:

- Net Electricity Exported to the grid by the project, ($EG_{PJ, y}$)
- Electricity exported by project activity to grid recorded at 33kV metering points(Cluster meter), ($EG_{, Export, y}$)

- Electricity imported by project activity to grid recorded at 33kV metering point(Cluster meter), ($EG_{Import,y}$).
- Line loss between the metering point at 33 kV metering points of project activity and the metering point at 110 kV at the ENERCON pooling substation. (**T_E**)

In the opinion of the assessment team, the identified parameters sufficiently allows the ex post determination of emission reductions in conjunction with the validated ex ante parameters as per the requirements of the applied methodology.

The electricity share certificates/09/ namely, "Credit Notes" for the share of electricity generated issued by, "Tamilnadu Generation and Distribution Corporation Ltd" for each months to the PP form the basis for the recording the value of the parameters. The measurement procedure followed by, 'Tamilnadu Generation and Distribution Corporation Ltd' has been verified by the verification team and found to be in line with the PPA and registered monitoring plan/03/.

As per the registered PDD/03/ the metering of the electricity has been done at following two points,

- 33 kV transformer yard meters at each WTG of the project proponent.
- Sub-station meters connected at 110kV for all WTGs owned by wind mill investors including the WTGs of the PP.

It is worthy to note, as per registered PDD, the parameters needs to be monitored in MWh however, the values are being monitored in kWh and thereafter converted in MWh for the purpose of ER calculation using the standard conversion (1 MWh = 1000 kWh). The approach was accepted by the assessment team as it is standard conversion.

Findings:

The information regarding the monitoring parameters and monitoring methodology was not transparently presented in the MR version 01; CAR#02 was raised for the same and closed successfully. Please refer section 07 for the details of finding.

Opinion:

It is concluded by the verification team that the actual implemented monitoring plan of the project activity complies with the registered monitoring plan of the registered PDD/03/ and compliance with the applied monitoring methodology, "Consolidated monitoring methodology for grid-connected electricity generation from renewable sources" (ACM 0002, Version 12.1.0)/08/.

3.3 Compliance of Monitoring with Monitoring Plan

The monitoring parameters involved in the project activity as per registered PDD is analysed in detail in the subsections below:

3.3.1. Data/Parameter, Unit: $EG_{PJ,y}$, (MWh)

Net Electricity Exported to the grid by the project.

	Discussion and verification assessment
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	This is a calculated parameters based on the other monitoring parameters i.e. $EGy_{,Export}$, $EGy_{,Import}$ and T_E. The details of monitoring equipment to monitor the parameters which are used to arrive at this parameters are listed in the 3.3.2 and 3.3.3.
Measuring/Reading/ Recording frequency	This is a calculated parameter therefore doesn'trequire any monitoring equipment.
Data collection (from data generation,	This parameter is calculated based on the following formula: $EG_{PJ,y}$= EGExport,y-EGImport,y-T_E

aggregation, to recording, calculation and reporting)	(The description of EGExport,y, EGImport,y and T_E are explained in section 3.3.2, 3.3.3& 3.3.4)
Verified value	28,706.684MWh.
Cross checks	The values are sourced from the credit notes issued by the, "Tamil Nadu Generation and Distribution Corporation Ltd" (generation & distribution entity of TNEB) and same were cross verified from the invoices raised by PP against the credit notes. The value of daily generation for the 18th July 2011 was verified from the "Daily Generation Reports" issued by Enercon to project proponent.
QA/QC procedures applied	All the main meter and check meters were calibrated by state utility annually andrecords were available with PP and same has been verified by the assessment team. Refer Annex – 1 for the details ofcalibrations.

Discussion: This is a calculated parameter based on the other parameters listed in the below table 3.3.2, 3.3.3 and 3.3.4, all the root parameters used to arrive at this calculated parameters were assessed by the verification team with regard to the appropriateness of the applied measurement / determination method, the correctness of the values applied for ER calculation, the accuracy, and applied QA/QC measures..

During the documents review, it was observed by the verification teamthat the billing cycle of the month of August 2011 starts from 18/07/2011 to 17/08/2011, whereas the crediting period of the project activity starts from 19/07/2011. For the ER calcualtion, PP considered the electricity generation of the complete month of August 2011 including 18/07/2011. For the same point CAR 04 was raised. In response to CAR 04 the project proponent has deducted the generation of 18th July recoreded at the "Controller Meters" from the net genration for the month (18/07/2011 to 17/08/2011).

The generation recorded at the WTG control pannel for the 18thJuly 2011 is the gross generation for the day becuase it doesn't include the value of import and transmission losses. Therfore, the deduction of the gross generation recorded on the WTG control pannel for the 18thJuly 2011from the "Net Generation" of the billing cycle of August (18/07/2011 to 17/08/2011) will lead the minimum value of the parameter $EG_{PJ,y}$(net electricity generation) for the month of August 2011 (given, the 'import and transmission losses' for 18/07/2011 were already deducted from the 'export' for the billing cycle of August 2011).

The daily generation report/15/ has been verified to confirm the controller panel meter readings and the credit note/09/ along with the invoices/16/ raised by PP were verified for the readings of the billing cycle of (18/07/2011 to 17/08/2011) considered for the calculation.

The above approach has been assessed by the verification team and found appropriate and has been accepted for the ER calculations for the month of "August 2011".

Findings:

CL#01 (point 3, 4), CAR#02 (point 1), CAR#03 (point 1) and CAR#04 were raised and successfully closed, refer section 07 for the details of finding.

3.3.2. Data/Parameter, Unit: $EG_{Export,y}$(MWh.)

Electricity exported by project activity to grid recorded at 33kV metering points (Cluster meter)

	Discussion and verification assessment
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	The bidirectional energy meters are installed to monitor this parameter. The details of meters are listed in the Annex 1 of this report.

Measuring/Reading/ Recording frequency	Continuous monitoring and monthly recordings.
Data collection (from data generation, aggregation, to recording, calculation and reporting)	Each WTG is connected with the individual energy meter at 33 kV transformer yardexcept; a) WTG HTSC no. 3376 wherein a common meter installed for 11 WTGs b) WTG HTSC No 3474 wherein a common meter installed for 2 WTGs c) WTG HTSC No. 3509 where there is a common meter for 2 WTGs), The meters monitor the continuous electricity generation and the joint meter readings are taken once in a month in the presence of the representatives of the project proponent by the, "Tamil Nadu Generation and Distribution Corporation Ltd." Based on the JMR taken the Tamil Nadu Generation and Distribution Corporation Ltd issues the "Credit Notes" for the share of electricity for each WTG/09/.
Verified value	29834.934MWh.
Cross checks	The values are sourced from the credit notes/09/ issued by the Tamil Nadu Generation and Distribution Corporation Ltd and same were cross verified from the invoices/16/ raised by PP against the credit notes.
QA/QC procedures applied	The energy meters were calibrated at the annual frequency as defined in the registered PDD/03/. Verification Team has verified all the calibration certificates/13/ and found that the errors during the calibration are within the permissible range. The calibration details of energy meters are presented in the Annexure 1. The value of $EG_{Export,y}$were crosschecked from invoices raised on DISCOM for the entire monitoring period. All the QA/QC parameters adopted during the monitoring period were in line to PPA.

Findings:

CAR#02 (point 1),CAR#03(point 1) and CAR#04 were raised and closed successfully, please refer to section 07 for the details of findings.

3.3.3. Data/Parameter, Unit: $EG_{Import,y}$(MWh)

Electricity imported by project activity to grid recorded at 33kV metering point (Cluster meter).

	Discussion and verification assessment
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	The bidirectional energy meters are installed to monitor this parameter. The details of meters are listed in the Annex 1 of this report.
Measuring/Reading/ Recording frequency	Continuous monitoring and monthly recordings.
Data collection (from data generation, aggregation, to recording, calculation and reporting)	Each WTG is connected with the individual energy meter at 33 kV transformer yardexcept; a) WTG HTSC no. 3376 wherein a common meter installed for 11 WTGs b) WTG HTSC No 3474 wherein a common meter installed for 2

	WTGs c) WTG HTSC No. 3509 where there is a common meter for 2 WTGs), The meters monitor the continuous electricity generation and the joint meter readings are taken once in a month in the presence of the representatives of the project proponent by the Tamil Nadu Generation and Distribution Corporation Ltd. Based on the JMR taken the Tamil Nadu Generation and Distribution Corporation Ltd issue the "Credit Notes" for the share of electricity for each WTG.
Verified value	218.310 MWh.
Cross checks	The values are sourced from the credit notes/09/ issued by the Tamil Nadu Generation and Distribution Corporation Ltd and same were cross verified from the invoices/16/ raised by PP against the credit notes.
QA/QC procedures applied	The energy meters were calibrated at the annual frequency as defined in the registered PDD/03/. The verification team has verified all the calibration certificates/13/ and found that the errors during the calibration are within the permissible range. The calibration details of energy meters are presented in the Annexure 1. The value of $EG_{Import,y}$ were crosschecked from invoice raised on DISCOM for the entire monitoring period. All the QA/QC parameters adopted during the monitoring period were in line to PPA.

Findings: CAR#02 (point 1) and CAR#03 (point 1) were raised and closed successfully, please refer to section 07 for the details of findings.

3.3.4. Data/Parameter, Unit: T_E, (MWh.)

Line loss between the metering point at 33 kV metering points of project activity and the metering point at 110 kV at the ENERCON pooling substation.

	Discussion and verification assessment
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	This is a calculated parameters based on the other monitoring parameters i.e. export, import at 33kV yard meter and substation cluster meters. The details of monitoring equipments to monitor the parameters which are used to arrive at this parameters are listed in the 3.3.2 and 3.3.3.
Measuring/Reading/ Recording frequency	This is a calculated parameter and directly sourced from the "Credit Notes" issued by the Tamil Nadu Generation and Distribution Corporation Ltd on monthly bases in line to the Section B.7.1 and B.7.2 of the registeredPDD.
Data collection (from data generation, aggregation, to recording, calculation and reporting)	This parameter is calculated by the DISCOM based on the following formula and directly sourced from the "Credit Notes" for the share of electricity issued from Tamil Nadu Generation and Distribution Corporation Ltd: $Z = \frac{(X1+X2+X3+X4+.....Xn) - Y}{(X1+X2+X3+X4+.....Xn)} \times 100\%$ Where : • Z=Percentage Line loss incurred in Line between the meters located at 33 kV metering point (including the machines of the project activity and other project developers) and the meters located at 110kV metering point (bulk meter: main and check)

	at high voltage side of receiving sub-station. • (X1+X2+X3+X4+…..Xn) = Summation of meter readings (Export- Import) at 33 kV metering points for all the project developers connected to receiving substation (including the machines of the project activity and other project developers). • Xi = Net Export (Export – Import) Reading (Xi) noted at energy meter installed at 33kV metering point where i vary from 1 to n which represents the meters connected to project activity and other project developers. X1, X2, X3,…Xn are the meters that are installed at 33kV metering point (including the machines of the project activity and other project developers) and further connected to the receiving substation at 110 kV by internally connected lines. • Y = Net Export (Export-Import) Reading at bulk meter installed at high voltage side of transformer of the receiving sub-station at 110 kV connecting machines of the project activity and other project developers.
Verified value	763.933 MWh
Cross checks	The credit notes/09/ issued by the Tamil Nadu Generation and Distribution Corporation Ltd were verified for the entire monitoring period and cross checked with the invoices/16/ raised by PP to Tamil Nadu Generation and Distribution Corporation Ltd against the credit notes.
QA/QC procedures applied	The value of TE was crosschecked from invoice raised to state electricity board. QA/QC procedures were implemented by DISCOM/State utility (TNEB) pursuant to the provisions of the power purchase agreement except or otherwise explicitly stated in the PDD.

Discussion:

This is a calculated parameter based on the reading recorded at 33 kV transformer yard meters and 110kV substation meters. This parameter is directly sourced from the credit notes/09/ issued by the Tamilnadu Generation and Distribution Corporation Ltd and same were cross verified from the invoices/16/ raised by PP against the credit notes.

The detail calculation procedure to arrive this parameter has been described in the above table; the apportioning approach to calculate the transmission losses was also confirmed by interviewing the sub-station employees during the site visit.

During the documents review it was found by the verification team the substation meters S.Nos. HT1100044&HT1100045used for the measurement of "Transmission Losses" were not calibrated annually(indicated in the tablebelow)as per the frequency defined in the registered PDD/3/, the project proponent has considered the maximum permissible error (since the actual errors in the delayed calibration was less than the permissible errors)for the duration of delayed calibration in accordance with the CDM Executive Board Guidelines, "Guidelines for assessing compliance with the calibration frequency requirement", EB-52 annex- 60. The calculation approach in the emission reduction calculation sheet/11/ has been verified and found to be correct.

Details of Substation Meters:

S.N.	Meter Location	Serial Nos.	Calibration Date	Due Date	Maximum Permissible Error
1	Main Meter	HT1100044	27/09/2010	26/09/2011	0.2%
2	Check Meter	HT1100045	27/09/2010	26/09/2011	0.2%

Findings: CAR#03 was raised and closed successfully, please refer to section 07 for the details of findings.

Opinion:

It is concluded by the verification team that the all the monitoring parameters have been monitored in compliance with the registered monitoring plan of the registered PDD/03/ and

compliance with the monitoring methodology, "Consolidated monitoring methodology for grid-connected electricity generation from renewable sources" (ACM 0002, Version 12.1.0)/08/.

3.4 Data not monitored (ex ante or external parameters)

3.4.1. Data/Parameter, Unit: EFgrid,BM,y. (tCO2e/MWh)

Build Margin Emission Factor of Southern Regional Electricity Grid

	Discussion and verification assessment
Verified value	0.81792 tCO2e/MWh
Source of value	"CO2 Baseline Database for Indian Power Sector", version 5 published by the Central Electricity Authority, Ministry of Power, Government of India dated November 2009/10/. (http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm)
Justification	This value has been sourced from the CEA database, Version 5/10/ and ex-ante fixed for the entire crediting period. Verification Team has cross-checked the CEA database and registered PDD/03/ and concludes that this value is correct.

3.4.2. Data/Parameter, Unit: EFgrid,OM,y. (tCO2e/MWh)

OperatingMargin Emission Factor of Southern Regional Electricity Grid

	Discussion and verification assessment
Verified value	0.98756 tCO2e/MWh
Source of value	"CO2 Baseline Database for Indian Power Sector", version 5 published by the Central Electricity Authority, Ministry of Power, Government of India. (http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm)
Justification	This value has been sourced from the CEA database, Version 5 and ex-ante fixed for the entire crediting period. Verification Team has cross-checked the CEA database and registered PDD/03/ and concludes that this value is correct.

3.4.3. Data/Parameter, Unit: EF_y or $EFgrid,CM,y$ (tCO2e/MWh)

CombinedMargin Emission Factor of Southern Regional Electricity Grid

	Discussion and verification assessment
Verified value	0.94515 tCO2e/MWh
Source of value	"CO2 Baseline Database for Indian Power Sector", version 5/10/ published by the Central Electricity Authority, Ministry of Power, Government of India. http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm
Justification	This value is calculated from the parameters as listed above 3.4.1 and 3.4.2 and ex-ante fixed for the entire crediting period. Verification Team has cross-checked the CEA database and registered PDD/03/ and concludes that this value is correct and correctly applied in the ER calculations/11/.

3.5 Remaining Issues (FARs from Previous Validation or Verification)

The verification team has reviewed the "validation report" /12/ and found there is no open issue raised from the Validating DOE which needs to be addressed during the first verification.

3.6 Assessment of Data & calculation of GHG Emission Reductions

Discussion:

The project proponent has submitted the emission reduction calculation excel sheet/11/ with respect to the monitoring report/02/. An elaborate calculation for the emission reduction including the values of the monitoring parameters at the required recording frequency is provided in the emission reduction calculation sheet/11/. The calculation has been carried out using appropriate approach and the applied equations are consistent in theregistered PDD/03/ the monitoring report/02/ and the emission reduction sheet/11/ are verified to confirm the same.

The calculation approach in the ER sheet/11/ has been verified by the verification team and found to be correct. The daily generation reports/15/ for the generation of 18th July 2011 have been verified to confirm the controller panel meter readings on same day and the "Credit Notes" issued by "Tamilnadu Generation and Distribution Corporation Ltd" for the share of electricity have been verified to confirm the net electricity supplied to grid.

The emission reduction calculation has been done as below:

ERy = BEy-PEy-LEy

$BE_y = EG_{PJ,y} * EF_{grid,CM,y}$

Where,

$EG_{PJ,y}$ is the net electricity supplied to the grid in year y (28707.884 MWh)

$EG_{PJ},y = EG_{Export},y - EG_{Import},y - T_E$

=29834.934-218.31-763.933

=28706.684 MWh.

EFy is the CO_2 emission factor of the grid (0.94515 tCO_2e/MWh fixed ex-ante)

BEy= 28706.684 MWh* 0.94515 tCO_2e/MWh

=27128 tCO2e

PE=0

LE=0

ERy = 27128 tCO2e-0-0

ERy= 27128 tCO2e

Comparison with ex-ante estimated emission reductions:

The actual emission reduction has been found to be 55.34% lower than the ex-ante estimated value of the emission reduction for the same duration of monitoring period.

Opinion:

The verification team concludes that the calculation provided in the monitoring report/02/ and emission reduction calculations spread sheet/11/ are complete and reflect all the requirements of the monitoring plan/03/:

(a) All the monitored data as required by the registered monitoring plan/3/ was available to PP.
(b) All the monitored data was verified by the "Credit Notes" issued by the DISCOM and crosschecked by the invoices/16/ raised by PP to state electricity board.
(c) All the formula used for the baseline, leakage and project emissions were inline to the registered monitored plan/3/.
(d) The ex-ante emission factoris correctly sourced from the registered PDD/3/ and was found to be appropriate and justified.

3.7 Quality of Evidence to Determine Emission Reductions

Discussion:

All necessary monitoring instruments are installed at the project site. Individual energy meters are installed at the 33 kV transformer yards of each WTGswhereas common meters are installed at the sub stations to measure the electricity exported/ imported to/from the entire wind firm.

The measuring devices are well known and state of the art. The details of the energy meters are presented in Annexture-1 of the Verification Report. The details of the meters were verified by the review of the calibration certificates/13/ and on the basis of physical verification during the site visits/04/ conducted by the verification team. The data recording (Measuring/ Reading/ Recording frequency) were found to be in compliance with the registered monitoring plan and applied methodology, the operation and maintenance staff were interviewed during the site visit to confirm the same.

Findings: CL#1(point 3, 5) wereraised and closed successfully, please refer to section 07 for the details of findings.

Opinion:
The verification team concluded that the evidence to calculate the emission reductions are of sufficient quantity and appropriate quality, all the data used for the ER calculation has been sourced from the "Credit Notes" released by the government body/DISCOM therefore reliable. The calibrations/13/ of energy meters were also verified to assess the quality of measuring equipment,.

3.8 Management System and Quality Assurance

Discussion:

The operation and maintenance/06/ of the project activity is carried out by the WTG supplier, which is Enercon (India) Limited in this case. The monitoring of the project activity is also done by the same entity.

It can therefore be concluded that the CDM project along with its management system is in place and properly executed. In addition, EIL is also an ISO certified organization and thus all the QA/QC procedures are in accordance with theISO standard.

Opinion:

The responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan.

4. RECOMMEDATIONS / FORWARD ACTION REQUEST

There are no recommendations/ Forward Action Request raised/given.

5. VERIFICATION & CERTIFICATION STATEMENT

KBS Certification Services Pvt. Ltd. has been contracted by Vaayu (India) Power Corporation Private Limited to undertake independent verification and certification for the greenhouse gas (GHG) emission reductions reported from the Vaayu India Wind Power Project in Tamil Nadu, UNFCCC Ref. No. 4930 for the monitoring period 19/07/2011 up to 17/02/2012 in the Monitoring Report. Version 01 dated 16/04/2012 (made publicly available).

The verification is based on the validated and registered PDD and the monitoring report for this project. Our verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakech accord, as well as those defined by the CDM Executive Board.

The management of the Vaayu (India) Power Corporation Private Limited is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project Final Monitoring Report Version 06 dated07/07/2012.The calculation and determination of GHG emission reductions from the project is the responsibility of the management of the Vaayu (India) Power Corporation Private Limited. The development and maintenance of records and reporting procedures are in accordance with the Monitoring Report Version 06dated07/07/2012.

It is our responsibility to express an independent GHG verification opinion on the GHG emissions and on the calculation of GHG emission reductions from the project for the period 19/07/2011 up to 17/02/2012 based on the reported emission reductions in the Final Monitoring Report Version 06dated 07/07/2012for the same period.

Based on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these, KBS planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence for us to give reasonable assurance that this reported amount of GHG emission reductions for the period is fairly stated.

KBS confirms the following;

Monitoring Period: From 19/07/2011 up to 17/02/2012

***Verified and certified emission in the above reporting period*:** 27,128 tCO2e

	Amount	Unit
Baseline emissions (BE)	27,128	tCO2e
Project emissions (PE)	0	tCO2e
Leakage emissions (LE)	0	tCO2e
Certified emission reductions (CERs)	27,128	tCO2e

Location: Faridabad
Date: 10/07/2012

Kaushal Goyal
Managing Director
KBS Certification Services Pvt. Ltd.

6. REFERENCES

/1/	Monitoring Report, Version 01 dated 16/04/2012 (publicly made available) (http://cdm.unfccc.int/Projects/DB/DNV-CUK1308823376.98/iProcess/KBS_Cert1335247196.16/view)
/2/	a) Monitoring Report, Version 02 dated 23/05/2012 b) Monitoring Report, Version 03 dated 04/06/2012 c) Monitoring Report, Version 04 dated 07/06/2012 d) Monitoring Report, Version 05 dated 28/06/2012 e) Monitoring Report, Version 06 dated 07/07/2012 (final)
/3/	Registered Project Design Document, Version 04 dated 15/03/2011 (http://cdm.unfccc.int/Projects/DB/DNV-CUK1308823376.98/view)
/4/	Interviews, physical observations, photographs and attendance sheet, dated 17/05/2012 and 18/05/2012
/5/	Commissioning Certificates issued by Tamil Nadu Electricity Board, the reference no. is mentioned in Table 1 of this report, dated 29/9/2010 Commissioning Certificates issued by Tamil Nadu Electricity Board, the reference no. is mentioned in Table 1 of this report, dated 28/12/2010 Commissioning Certificates issued by Tamil Nadu Electricity Board, the reference no. is mentioned in Table 1 of this report, dated 31/12/2010 Commissioning Certificates issued by Tamil Nadu Electricity Board, the reference no. is mentioned in Table 1 of this report, dated 02/03/2011 Commissioning Certificates issued by Tamil Nadu Electricity Board, the reference no. is mentioned in Table 1 of this report, dated 11/03/2011 Commissioning Certificates issued by Tamil Nadu Electricity Board, the reference no. is mentioned in Table 1 of this report, dated 18/03/2011 Commissioning Certificates issued by Tamil Nadu Electricity Board, the reference no. is mentioned in Table 1 of this report, dated 22/03/2011 Commissioning Certificates issued by Tamil Nadu Electricity, the reference no. is mentioned in Table 1 of this report, Board dated 01/07/2011 Commissioning Certificates issued by Tamil Nadu Electricity Board, the reference no. is mentioned in Table 1 of this report, dated 11/07/2011
/6/	Operational Agreement between Enercon (India) Limited and Vaayu (India) Power Corporation Pvt. Ltd., reference no. CV 362555, dated 05th May, 2010
/7/	Clean Development Mechanism Validation And Verification Manual Version01.2, Annex-1 of EB55
/8/	Consolidated baseline methodology for grid-connected electricity generation from renewable sources, Version 12.1.0. dated 17th September 2010.
/9/	Credit Notes for the share of electricity generated for the month of August 2011, September 2011, October 2011, November 2011, December 2011, January 2012 and February 2012 issued by Tamil Nadu Generation and Distribution Corporation Ltd.
/10/	CO2 Baseline Database for Indian Power Sector", version 5 published by the Central Electricity Authority, Ministry of Power, Government of India. http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm

/11/	Emission Reduction calculation sheet, version 06.
/12/	Validation report "Vaayu India Wind Power Project in Tamil Nadu" in India dated 9th July 2010.
/13/	Calibration Certificate issued by Tamil Nadu Electricity Board dated 9/5/2011; the meter number is mentioned in the Annexure 1 to this report Calibration Certificate issued by Tamil Nadu Electricity Board dated 10/5/2011; the meter number is mentioned in the Annexure 1 to this report Calibration Certificate issued by Tamil Nadu Electricity Board dated 31/12/2010; the meter number is mentioned in the Annexure 1 to this report Calibration Certificate issued by Tamil Nadu Electricity Board dated 18/3/2011; the meter number is mentioned in the Annexure 1 to this report Calibration Certificate issued by Tamil Nadu Electricity Board dated 1/7/2011; the meter number is mentioned in the Annexure 1 to this report Calibration Certificate issued by Tamil Nadu Electricity Board dated 11/7/2011; the meter number is mentioned in the Annexure 1 to this report Calibration Certificate issued by Yadav Measurements Pvt. Ltd dated 09/11/2011 Calibration Certificate issued by Electronic test & Development centre dated 27/09/2011
/14/	CDM Executive Board: Annex 60, CDM-EB 52, "Guidelines for assessing compliance with the calibration frequency requirements", version 1.
/15/	Daily generation reports for the generation of 18th July issued from Enercon (India) Limited to PP.
/16/	Invoices raised by PP against the Credit Notes for the share of electricity generated for the month of August 2011, September 2011, October 2011, November 2011, December 2011, January 2012 and February 2012 to Tamil Nadu Generation and Distribution Corporation Ltd.
/17/	PPA signed between M/s. Vaayu (India) Power Corporation Pvt. Ltd. and TNEB/DISCOM dated 31/12/2010. PPAs signed between M/s. Vaayu (India) Power Corporation Pvt. Ltd. and TNEB/DISCOM dated 28/12/2010. PPA signed between M/s. Vaayu (India) Power Corporation Pvt. Ltd. and TNEB/DISCOM dated 11/03/2011. PPA signed between M/s. Vaayu (India) Power Corporation Pvt. Ltd. and TNEB/DISCOM dated 02/03/2011.

Key difference between webhosted MR and final MR (indicative not exhaustive)

MR Section	**Description of the change**
A.1	Total number of emission reduction achieved during the monitoring period reduced from 27268 tCO_2 to **27128 tCO_2**
C	Inclusion of substation meters detail.
E	Reduction in emission reductions for the month of billing cycle of August from 6188 tCO_2 to 6050tCO_2

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7. FINDINGS DOCUMENT

Total findings raised	**CAR: 03**	**CL: 01**	**FAR: Nil**

Date	**Type & Number**	**Raised by**	**Reference**
16/05/2012	**CL#01**	**Assessment team**	CDM-D-31
Non conformities raised			
The following referred documents in MRhas not been submitted to Verification Team: 1) Copy of PPA 2) Commissioning certificate for WTG No. 3515 3) Calibration Certificates of energy meters for the WTGs No. 3470, 3509, 3769, 3770 & 3791 4) The JMR/Invoices for the month of January & February 2012 for the WTGs nos. 3500-3528. 5) Calibration Certificates of the substation bulk meters.			
Project participant response		**23/05/2012**	
Please find the soft copies of PPA, Commissioning certificate of WTG No. 3515, Calibration Certificates of WTGs No. 3470, 3509, 3769, 3770 & 3791, JMR/Invoices for the month of January & February 2012 for the WTGs nos. 3500-3528 and Calibration Certificates of the substation bulk meters.			
Documentation Provided as Evidence by Project Participant			
1) PPA 2) Commissioning Certificate of WTG No. 3515 3) Calibration Certificates of energy meters for the WTGs No. 3470, 3509, 3769, 3770 & 3791 4) The JMR/Invoices for the month of January & February 2012 for the WTGs nos. 3500-3528. 5) Calibration Certificates of the substation bulk meters.			
Information Verified by Lead Assessor		**Date of review: 28/06/2012**	
The required documents are submitted.			
Reasoning for not acceptance or close out			
All the listed documents provided to "Verification Team". The Verification Team has crosschecked the document and found them in line to the information provided in MR.			
Date of acceptance ~~or non acceptance~~		**Date: 28/06/2012**	**Status: Closed.**

Date	**Type & Number**	**Raised by**	**Reference**
16/05/2012	**CAR#02**	**Assessment team**	CDM-D-31
Non conformities raised			
1) The information provided in the tables of section D.2 of the published MR against the item "Measuring/Reading/Recording Frequency" is incomplete for all the monitoring parameters. 2) The information provided in the table of section D.2 of the published MR for the monitoring parameter "T_E" against the item "Measured/Calculated/Default" is incorrect as this parameter is a calculated parameter not the measured parameter. Moreover the calculation method for this parameter is not mentioned in the table.			
Project participant response		**23/05/2012**	

1) Section D.2 of the MR has been revised to provide detail information against the item "Measuring/Reading/Recording Frequency" for all the monitoring parameters. 2) In section D.2, for the monitoring parameter "T_E" the detail against the item "Measured/Calculated/Default has been changed to calculated one. Also, the calculation method has been provided		
Documentation Provided as Evidence by Project Participant		
Revised MR		
Information Verified by Lead Assessor	**Date of review: 07/07/2012**	
The revised MR had been corrected with respect to CAR 02.		
Reasoning for not acceptance or close out		
1) The information provided in the tables of section D.2 of the revised MR against the item "Measuring/Reading/Recording Frequency" is corrected in compliance to the registered PDD and methodology. 2) The information provided in the table of section D.2 of the revised MR for the monitoring parameter "TE" against the item "Measured/Calculated/Default" is corrected and the calculation method for this parameter is now mentioned in the table.		
Date of acceptance ~~or non acceptance~~	**Date: 07/07/2012**	**Status: Closed.**

Date	**Type & Number**	**Raised by**	**Reference**
16/05/2012	**CAR#03**	**Assessment team**	CDM-D-31
Non conformities raised			
1) The Sr. No. of energy meter for the WTG 3501 is not in tally with the submitted calibration certificate. 2) The details of substation bulk energy meters is not included in the published monitoring report however these meters are used in the determination of transmission losses and the monitoring parameter $EG_{PJ,y}$.			
Project participant response	**23/05/2012**		
1) The correct Sr. No. of energy meter for the WTG 3501 has been provided in revised MR. 2) Details of substation bulk energy meters have been provided in revised MR.			
Documentation Provided as Evidence by Project Participant			
Revised MR			
Information Verified by Lead Assessor	**Date of review: 02/06/2012**		
The Monitoring Report is revised with respect to the sought information.			
Reasoning for not acceptance or close out			
1) The correct Sr. No. of energy meter for the WTG 3501 has been incorporated in revised MR and the same has been verified with the respective calibration certificate. 2) Details of substation bulk energy meters have been provided in revised MR and the same has been verified with the respective energy meter's calibration certificates.			
Date of acceptance ~~or non acceptance~~	**Date: 02/06/2012**	**Status: Closed.**	

Date	**Type & Number**	**Raised by**	**Reference**

20/05/2012	**CAR#04**	**Assessment team**	CDM-D-31
Non conformities raised			
During the document review the "Verification Team" has observed that the billing cycle of the month of August 2011 starts from 18/07/2011 to 17/08/2011, whereas the crediting period of the project activity starts from 19/07/2011. However, its not clear why PP has considered the electricity generation of full month of August 2011, including 18/07/2011for ER calculation?			
Project participant response		**23/05/2012**	
The controller reading for the date of 18/07/2011 has been reduced from the electricity generation of August-2011 to get the conservative estimate of emission reduction in the revised emission reduction calculation.			
Documentation Provided as Evidence by Project Participant			
Revised CER calculation sheet.			
Information Verified by Lead Assessor		**Date of review: 02/06/2012**	
The Monitoring Report and ER sheet has been revised.			
Reasoning for not acceptance or close out			
Since the generation recorded at the WTG control pannel for the 18th July 2011 is the gross generation for the day as it doesnt include the value of import and transmission losses. Therefore, the deduction of the gross generation recorded on the WTG control pannel for the 18th July from the "Net Generation" of the billing cycle of August (18/07/2011 to 17/08/2011) will lead the minimum value of the parameter $EG_{PJ,y}$ i.e.,the net electricity generation for the month of August 2011 (Since the import and transmission losses for the 18/07/2011 were already deducted from the Export for the billing cycle of August 2011). The daily generation report/15/ has been verified to confirm the controller panel meter readings and the credit note/09/ along with the invoices/16/ raised by PP were verified for the readings of the billing cycle of (18/07/2011 to 17/08/2011) considered for the calculation. The above approach has been assessed by the verification team most appropriate and therefore the same has been accepted for the ER calculations for the month of "August 2011".			
Date of acceptance ~~or non acceptance~~		**Date: 02/06/2012**	**Status: Closed.**

8. CERTIFICATE OF COMPETENCE

Personnel Name:		**Kaviraj Singh**	
Qualified to work as:			
Team Leader	☒	Technical Expert	☒
Validator/Verifier	☒	Financial Expert	☐
Technical Reviewer	☒	Local Expert (India)	☒
Area(s) of Technical Expertise			
Sectoral Scope	**Technical Area**		
Energy Industries (renewable/non-renewable)	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar TA 1.2: Energy generation from renewable energy sources		
Waste handling and disposal	TA 13.1: Waste handling and disposal		
Approved by (Manager C & T)	Mayank Kumar Jain		
Approval date:	12 /12/2011		

Personnel Name:		**Ashok Kumar Gautam**	
Qualified to work as:			
Team Leader	☒	Technical Expert	☒
Validator/Verifier	☒	Financial Expert	☐
Technical Reviewer	☒	Local Expert (India)	☒
Area(s) of Technical Expertise			
Sectoral Scope	**Technical Area**		
Energy industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
Waste handling and disposal	TA 13.1: Waste handling and disposal		
Approved by (Manager C& T)	Mayank Kumar Jain		
Approval date:	12/12/2011		

Personnel Name:		**Sanjay Kandari**	
Qualified to work as:			
Team Leader	☒	Technical Expert	☒
Validator/Verifier	☒	Financial Expert	☐
Technical Reviewer	☐	Local Expert (India)	☒
Area(s) of Technical Expertise			
Sectoral Scope	**Technical Area**		
Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources		
Approved by (Manager C& T)	Mayank Kumar Jain		
Approval date:	09/02/2012		

Personnel Name:	**Vijay Mathew**

Qualified to work as:			
Team Leader	☐	Technical Expert	☐
Validator/Verifier	☒	Financial Expert	☐
Technical Reviewer	☐	Local Expert	☒
Area(s) of Technical Expertise			
Sectoral Scope		**Technical Area**	
N/A		N/A	
Approved by (Manager C& T)		Mayank Kumar Jain	
Approval date:		21/02/2012	

ANNEXURE 1 – DETAILS OF ENERGY METERS

S. No.[1]	WEG H.T. S.C. NO	Meter No.	Date of Calibration	Reference No.	Calibration Validity[2]
1	3376	TNU04909[3]	11/3/2011	AEE/MRT/WF/TIN/F4/D216/11	10/03/2012
2	3470	TN901101[4]	31/12/2010 &08/11/2011	AEE/MRT/WF/TIN/F4/D21/2010 AEE/MRT/WF/TIN/F4/D2426/11	07/11/2012
3	3509	TNB04626[5]	18/3/2011	AEE/MRT/WF/TIN/F4/D255/11	17/03/2011
4	3461	HT2110167	09/05/2011	AEE/MRT/WF/TIN/F4/D757/11	08/05/2012
5	3462	HT2110162	09/05/2011	AEE/MRT/WF/TIN/F4/D761/11	08/05/2012
6	3463	HT2110156	09/05/2011	AEE/MRT/WF/TIN/F4/D756/11	08/05/2012
7	3464	HT2110161	09/05/2011	AEE/MRT/WF/TIN/F4/D752/11	08/05/2012
8	3465	HT2110151	10/05/2011	AEE/MRT/WF/TIN/F4/D758/11	09/05/2012
9	3466	HT2110149	10/05/2011	AEE/MRT/WF/TIN/F4/D746/11	09/05/2012
10	3467	HT2110153	10/05/2011	AEE/MRT/WF/TIN/F4/D759/11	09/05/2012
11	3500	HT2110146	09/05/2011	AEE/MRT/WF/TIN/F4/D747/11	08/05/2012
12	3501	HT2110143	09/05/2011	AEE/MRT/WF/TIN/F4/D760/11	08/05/2012
13	3502	HT2110152	10/05/2011	AEE/MRT/WF/TIN/F4/D748/11	09/05/2012
14	3503	HT2110166	09/05/2011	AEE/MRT/WF/TIN/F4/D762/11	08/05/2012
15	3504	HT2110148	10/05/2011	AEE/MRT/WF/TIN/F4/D745/11	09/05/2012
16	3505	HT2110154	10/05/2011	AEE/MRT/WF/TIN/F4/D744/11	09/05/2012
17	3506	HT2110168	10/05/2011	AEE/MRT/WF/TIN/F4/D743/11	09/05/2012
18	3507	HT2110144	10/05/2011	AEE/MRT/WF/TIN/F4/D742/11	09/05/2012
19	3508	HT2110163	10/05/2011	AEE/MRT/WF/TIN/F4/D741/11	09/05/2012
20	3510	HT2110165	09/05/2011	AEE/MRT/WF/TIN/F4/D740/11	08/05/2012
21	3511	HT2110158	09/05/2011	AEE/MRT/WF/TIN/F4/D739/11	08/05/2012
22	3512	HT2110157	09/05/2011	AEE/MRT/WF/TIN/F4/D750/11	08/05/2012
23	3513	HT2110147	10/05/2011	AEE/MRT/WF/TIN/F4/D738/11	09/05/2012
24	3514	HT2110150	10/05/2011	AEE/MRT/WF/TIN/F4/D749/11	09/05/2012
25	3515	HT2110159	09/05/2011	AEE/MRT/WF/TIN/F4/D751/11	08/05/2012
26	3516	HT2110164	09/05/2011	AEE/MRT/WF/TIN/F4/D753/11	08/05/2012
27	3517	HT2110142	09/05/2011	AEE/MRT/WF/TIN/F4/D753/11	08/05/2012
28	3518	HT2110160	09/05/2011	AEE/MRT/WF/TIN/F4/D755/11	08/05/2012
29	3519	HT2110145	09/05/2011	AEE/MRT/WF/TIN/F4/D737/11	08/05/2012
30	3528	HT2110155	09/05/2011	AEE/MRT/WF/TIN/F4/D763/11	08/05/2012
31	3768	HT2110195	01/07/2011	AEE/MRT/WF/TIN/F4/D901/11	30/06/2012

[1] Meter from SN 01 to 3 are of 'Premier' make and rest of the meters are of 'Wallabey' make. All meters are of 0.2s accuracy class, irrespective of make.

[2]The calibration frequency for all meters mentioned in this table is defined as annual in the registered monitoring plan and also followed on site except the meters applying the guidance of EB-52 annex- 60 for delayed calibration.

[3]This is a common meter for 11 WEGs

[4]This is a common meter for 2 WEGs

[5]This is a common meter for 2 WEGs

32	3769	HT2110220	01/07/2011	AEE/MRT/WF/TIN/F4/D896/11	30/06/2012
33	3770	HT2110196	01/07/2011	AEE/MRT/WF/TIN/F4/D897/11	30/06/2012
34	3771	HT2110215	01/07/2011	AEE/MRT/WF/TIN/F4/D902/11	30/06/2012
35	3772	HT2110219	01/07/2011	AEE/MRT/WF/TIN/F4/D903/11	30/06/2012
36	3773	HT2110216	01/07/2011	AEE/MRT/WF/TIN/F4/D904/11	30/06/2012
37	3774	HT2110169	01/07/2011	AEE/MRT/WF/TIN/F4/D905/11	30/06/2012
38	3775	HT2110191	01/07/2011	AEE/MRT/WF/TIN/F4/D906/11	30/06/2012
39	3776	HT2110214	01/07/2011	AEE/MRT/WF/TIN/F4/D907/11	30/06/2012
40	3777	HT2110226	01/07/2011	AEE/MRT/WF/TIN/F4/D908/11	30/06/2012
41	3778	HT2110198	01/07/2011	AEE/MRT/WF/TIN/F4/D909/11	30/06/2012
42	3779	HT2110223	01/07/2011	AEE/MRT/WF/TIN/F4/D910/11	30/06/2012
43	3780	HT2110218	01/07/2011	AEE/MRT/WF/TIN/F4/D911/11	30/06/2012
44	3781	HT2110229	01/07/2011	AEE/MRT/WF/TIN/F4/D912/11	30/06/2012
45	3782	HT2110206	01/07/2011	AEE/MRT/WF/TIN/F4/D913/11	30/06/2012
46	3783	HT2110211	01/07/2011	AEE/MRT/WF/TIN/F4/D914/11	30/06/2012
47	3784	HT2110192	01/07/2011	AEE/MRT/WF/TIN/F4/D915/11	30/06/2012
48	3785	HT2110203	01/07/2011	AEE/MRT/WF/TIN/F4/D916/11	30/06/2012
49	3789	HT2110225	11/07/2011	AEE/MRT/WF/TIN/F4/D953/11	10/07/2012
50	3790	HT2110228	11/07/2011	AEE/MRT/WF/TIN/F4/D954/11	10/07/2012
51	3791	HT2110224	11/07/2011	AEE/MRT/WF/TIN/F4/D955/11	10/07/2012
Substation meters					
1	Main Meter	HT1100044	27/09/2010 & 09/11/2011	ETDC(CN)/2010/37172 YMPL/212963/39008	08/11/2012
2	Check Meter	HT1100045	27/09/2010 & 09/11/2011	ETDC(CN)/2010/37173 YMPL/212963/39009	08/11/2012

History of the document

Version	Date	Nature of revision	Reviewed by	Approved by
2.0	21/12/2011	Comprehensively revised	Manager CDM Quality 21/12/2011	Managing Director 21/12/2011