



Voluntary Carbon Standard Version 2007
Verification Report Template

19 November 2007

Verification Report:

Name of Verification company:	Date of the issue:
Bureau Veritas Holding SAS	30-10-2009
Report Title:	Approved by:
Verification Report of "150 MW grid connected Wind Power based electricity generation project in Gujarat, India"	Mr. H. B. Muralidhar
Client:	Project Title:
DLF Limited	150 MW grid connected Wind Power based electricity generation project in Gujarat, India
Summary:	

Bureau Veritas Certification has made the verification of the "150 MW grid connected Wind Power based electricity generation project in Gujarat, India" project of DLF Limited located at Kutch in state of Gujarat, India on the basis of Voluntary Carbon Standard 2007.1.

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 & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The project activity is to generate power (electrical energy) from renewable energy (wind energy), which displaces power generation from fossil fuel that would have been the scenario in absence of project activity, thus achieve GHG emission reduction due to utilization of renewable energy.

The verification is based on the documents submitted to CDM EB (Project ref. no. 2347), monitoring report and other supporting documents made available to the verifiers by project proponent. This verification is also carried out along with supplementary validation on VCS-PD in accordance with VCS policy dated 19th March 2008 of VCS 2007.1.

In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in validated and registered project (reference no. 2347) 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. The GHG emission reduction is calculated without material misstatements.

Work carried out by:	Number of pages:
Mr. Dinesh Shetty - Team Leader Mr. Sanjay Patankar - Team Member Mr. Bhavesh Prajapati - Team Member	32

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Abbreviations

VER	Voluntary Emission Reduction
VCU	Voluntary Carbon Unit
BMS	Bureau Veritas Certification's Management System
CAR	Corrective Action Request
CL	Clarification Request
FAR	Forward Action Request
CO ₂	Carbon Dioxide
DOE	Designated Operational Entity
DR	Document Review
GHG	Green House Gases
I	Interview
IETA	International Emissions Trading Association
MV	Means of Verification
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non Governmental Organisation
PD	Project Document
UNFCCC	United Nations Framework Convention for Climate Change
CDM	Clean Development Mechanism
VCS	Voluntary Carbon Standard
HCA	Host Country Approval
MU	Million Units
KW	Kilowatt
kWh	Kilowatt-hour
MW	Megawatt
MWh	Megawatt-hour
EF	Emission factor
GUVNL	Gujarat Urja Vikas Nigam Limited
GEDA	Gujarat Energy Development Authority
PPA	Power Purchase agreement
JMR	Joint Meter Reading
CEA	Central Electricity Authority
DLF	DLF Limited
GSEB	Gujarat State Electricity Board
WTG	Wind Turbine Generator
PO	Purchase Order

1 Introduction

1.1 Objective

Verification is the periodic independent review and ex-post determination by the verifier of the monitored reductions in GHG emissions during defined verification period.

The objective of the initial verification is to verify that the project is implemented as planned, to confirm that the monitoring system is in place and fully functional, and to assure that the project has generated verifiable emission reductions. This is the first verification of the project activity after registration under CDM of UNFCCC for the vintage from date on which actual emission reduction started (30/09/2007, date of first WTG commissioning) to the day before date of registration (17/06/2009). These emission reductions are verified as per the guidance provided by VCS 2007.1 standards.

The verification shall consider both qualitative and quantitative information on emission reductions. Quantitative data comprises the monitoring report and emission reduction calculations submitted to the verifier by the project proponent and qualitative data comprises information on internal management controls, calculation procedures, and procedures for transfer, frequency of emission reports, review and internal audit of calculations/data transfers.

1.2 Scope and Criteria

The verification scope is defined as an independent and objective review of monitoring reports, VCS project description (VCS PD) for supplementary validation of the project as the project activity is already registered under CDM of UNFCCC, the project's baseline study, including the monitored data and other relevant documents made available to verifier and information collected through performing interviews during on-site assessment of the project activity. The verification follows VCS 2007.1 criteria.

The verification is not meant to provide any consulting toward the client. However, stated request for forward actions and/or corrective actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.

The verification team was provided with a monitoring report, covering the period 30 September 2007 to 17 June 2009 (inclusive of both the days). Based on this documentation a document review and an on-site assessment of implementation and emission reduction were conducted. The Monitoring Report, version 01, dated 09/09/2009 covering the period 30 September 2007 to 17 June 2009 serves as the basis for the assessment presented herewith.

1.3 VCS project Description

DLF Limited is a leading real estate and infrastructure development company based in Gurgaon, India.

The project activity involves the installation of a wind farm of 150 MW capacity by 100 nos. of Wind Turbine Generators (WTGs) each of 1.5 MW capacities. All WTGs installed by the project proponent are distributed across the Kutch region in the villages of Lathedi, Jakhau, Nani Sindhodi, Moti Sindhodi, Chachhi, Sandhan, Budhia, Ranpar, Rapargarh, Sayra, Suthari, Vanku, Dhutai, etc. in state of Gujarat, India.

The electricity generated by the wind farm will be exported to the western regional grid (currently known as NEWNE grid) of India. The project activity will evacuate approximately 348 million units of renewable power annually to the western regional grid of India.

The purpose of the project activity is to generate electricity using renewable wind energy and sell it to State Electricity Board (SEB) of Gujarat. During commissioning of all WTGs, they were connected to Vanku, Suthari and Nani Sindhodi substations with metering systems. During time of site visit, out of total 100 WTGs (each of 1.5 MW), 54 WTGs are connected to Suthari and 46 WTGs are connected to Nani Sindhodi substations. The details of the change over as reported in annexure - 2 of monitoring report were verified during the site visit by the verification team on 5 October 2009 and 6 October 2009. The same were confirmed by verifying the corresponding share certificate issued by GEDA.

Emission reductions are calculated based on the net electricity supplied to grid and combined margin emission factor for the grid being supplied.

1.4 Level of assurance

The verification report is based on the documents made available to verification team and information provided during interviews. Based on the process and procedures conducted, it can be concluded that the GHG assertion

- Is materially correct and is not a fair representation of GHG data and information, and
- Has been prepared in accordance with VCS 2007.1

The data used for the calculation of emission reductions were taken from CEA (Central Electricity Authority), monthly share certificate issued by GEDA for net electricity exported to grid by project activity and test certificates for all meters were calibrated by GETCO (Gujarat Energy Transmission Company Ltd.). This provides assurance of authenticity of data and thereby GHG emission reduction.

2 Methodology

The verification included a desk review and site visit from 5 October 2009 to 6 October 2009 and interviews with the project proponents, consultants, O & M team, review of performance records, and observations of established practices and testing of accuracy of monitoring equipments. The verification also included review of monitoring results submitted by project proponent and application of monitoring methodology as per criteria provided in VCS protocol.

The verification team was provided with monitoring report (MR) along with other related documents. A desk review of MR, registered PDD and CDM validation Report was carried out. During site visit, the verification team has observed the metering system and monitoring system of the wind farm. The team of O & M contractor along with project proponent was interviewed (Refer Annexure-03) for maintenance of monitoring parameters and data related to and as required in registered PDD for emission reduction calculations. The verification team also checked the log sheets being maintained by O & M contractor for daily power generation, export to grid, import from grid, etc. All the test reports and calibration

certificates of all main meters and check meters at respective substations were verified and found OK.

The verification team also reviewed the calculations submitted by project proponent along with monitoring report in line with monitoring methodologies as per registered PDD (Project reference 2347). The team also checked with data generated by CMS and history of metering system and found the same in place.

A verification protocol was used to identify inadequacy in monitoring system at site, monitoring report and any other as may be observed during site visit. The verification protocol utilised for this verification was as per the requirements defined in the VCS protocol. In order to ensure transparency, a verification protocol is used as a part of verification. The protocol provides to the verification team, in a transparent manner, the criteria (requirements), means of verification and the results from verifying the identified criteria. A supplementary validation covering clauses 1.12, 1.13, 1.14, 8.1 and 8.2 of VCS PD was carried out as per policy announcement dated 19th march 2008 by VCSA.

The verification protocol serves the followings purposes:

- It organises details and clarifies the requirements the 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.

3 Verification Findings

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

There were no remaining issues or material discrepancy from previous validation.

3.2 Project Implementation

The project activity involves installation of 150 MW electricity generation by renewable energy (Wind Energy) with installation of 100 nos. of WTGs: each of 1.5 MW capacity. As per the registered PDD, this electricity is exported to western region electricity grid and thereby reduces fossil fuel consumption of equivalent amount. During two days site visit, it was

observed by verification team that 100 nos. of windmills (1.5 MW each) are installed in different villages of Kutch region in state of Gujarat. These WTGs are currently connected to Suthari and Nani Sindhodi substations. Earlier they were also connected to Nani Sindhodi, Vanku and Sutahri substations. The electricity generated by these WTGs is exported to grid through Mathara substation. The implementation of the project activity was found to be conforming to the description of the registered PDD and validation report under CDM of UNFCCC wide project reference no. 2347.

3.3 Completeness of Monitoring

The verification report is prepared based on the findings during the site visit and the monitoring report submitted by the project proponent version 01, dated 09/09/2009. The monitoring methodology used for the project activity is as per ACM0002, version 07 (EB36). The title of monitoring methodology is "Consolidated Baseline Methodology for grid connected electricity generation from renewable sources".

As described in registered PDD, the project activity meets applicability conditions of the methodology. Thus, it can be concluded based on the registered PDD that the baseline and monitoring methodology is correctly applied to this project activity.

As per the approved baseline and monitoring methodology, the parameter that is monitored for the calculations of emission reductions is the electricity supplied to the grid i.e. net of quantity of electricity exported to the grid and electricity imported from grid by the project activity. However, project activity also monitors electricity generated by each WTG and electricity generation recorded at the Vacuum Circuit Breaker (VCB) in their Central Monitoring System (CMS). These data are not used for calculations of emission reductions per say but would act as backup data for the net electricity generated.

However the monitoring plan described in the Registered PDD was inadequate and incomplete with respect to apportioning the power generation data when the dates (start or end) of monitoring period are not coinciding. The verification team raised CAR 1 towards this. The Project proponent responded to CAR with the revised Monitoring Plan in the VCS PD (dated 14/10/2009). The Verification team validated the revised Monitoring Plan with a provision to

apportioning. The revised Monitoring Plan is in line with applied Methodology ACM0002 and is as per the applicable guidelines. The VCS PD of the Project Activity also includes the revised Monitoring Plan.

The Project Participant informed the Verification Team that appropriate actions are being undertaken to initiate the revision to the Monitoring Plan in the registered PDD under CDM.

Further, the monitoring report (Version 01, Dated 09/09/2009) submitted by project proponent was verified by the Verification Team viz applicable guidelines. The inadequacies of Monitoring Report reported in the CAR1 in protocol at Annexure 1. The Project Participant responded with the revised monitoring report (Version 02, dated 14/10/2009) addressing the findings of the Verification Team along with the relevant supporting documents. The verification team verified the responses and closed the CAR2. The revised Monitoring Report (Version 02, dated 14/10/2009) addresses the issues satisfactorily and in line with the applicable guidelines.

Emission Reductions:

The emission reduction calculations \have been carried out using the following algorithm, which is in line with approved baseline and monitoring methodology ACM0002.

$$ER_y = BE_y - PE_y - LE_y$$

The grid emission factor calculated on the basis of combine margin is 0.90105 tCO₂/MWh and fixed ex-ante. It was verified and found to be in line with the "Tool to calculate the emission factor for an electricity system (version 1.1)" as indicated in the approved methodology ACM0002, version 07. The value of the grid emission factor utilised for project activity is based on the latest CEA (Central Electricity Authority) data for western regional electricity grid since the project activity will supply electricity to this grid.

During the site visit, verification team verified that the net electricity generation is monitored at substations. It was observed that the transmission line consists of main meter and check meter, which

are installed at substation. The WTGs are connected to main meter through feeder of substation. These meters are bi-directional recording electricity exported and imported to and from the grid. The meters are tri vector meters of accuracy 0.2 class. It was also verified with supportive documents that these meters undergo calibration at required intervals by Gujarat Electricity Board. The calibration certificates were verified and found all the meters were calibrated through out monitoring period and joint meter readings were taken only by calibrated meters. Annexure I includes details of calibration / test certificate of all meters through out the verification period. The details of the calibration of the meters are provided in the revised monitoring report (version 02, dated 14/10/2009).

The verification team found errors with respect to amount of emission reduction reported in monitoring report in comparison with ER calculation spreadsheet and starting date of monitoring period. These finding are reported in CAR 3 of the verification protocol. The detailed findings can be viewed in annexure-1. Project proponent corrected above errors in monitoring report and the same are found to be correct and accurate. Hence the CAR 3 is closed.

Project Emissions (PE_y) and Leakages (LE_y):

The verification team verified the project emission and leakages and found that there are no project emission and leakages attributable and accountable to Project Activity. This is in accordance with registered PDD and applied methodology.

3.4 Accuracy of Emission Reduction Calculations

Project proponent provided the spreadsheets used for calculating the emission reductions including the algorithms used in the calculations. The calculations of above parameters were checked in the spreadsheets and found to be correct. The spreadsheet of emission reduction calculation contains information on capacity with respect to substation where WTGs are connected, share of electricity i.e. net electricity exported to grid. This information is taken from share certificates issued by GEDA. To calculate emission reduction as per algorithm given in methodology, baseline emission is calculated by multiplying combined margin emission factor with

total electricity exported to grid. Since, project emission and leakages are 0, the baseline emission becomes the amount of emission reduction by project activity.

The verification team crosschecked the emission reduction calculations by comparing GEDA share certificate with corresponding monthly invoices, which were found to be correct and accurate.

There are no possible transposition errors between data sets since the monitoring of the net electricity generated is through calibrated electronic meters with high accuracy and also the monitoring of data internally takes place through sophisticated metering system at each WTG. Also all the recorded data are verified by the team of project proponent as described monitoring plan of registered PDD wide reference no. 2347.

The default data used in the monitoring calculations is the combined margin grid emission factor. The values of the grid emission factor 0.90105 tCO₂e/MWh is calculated based on the data from the publicly available database of the Central Electricity Authority (CEA) in line with tool provided in methodology and the same is considered to be appropriate by the verification team.

3.5 Quality of Evidence to Determine Emission Reductions

The GEDA issues certificate based on Meter readings taken jointly by State Electricity Board and O & M team at site. The data provided by GEDA are authentic based on which project proponent raises the invoices. The main meters and check meters are calibrated at required intervals by SEB ensuring error free measurements. The calibration certificates for entire vintage were verified along with the daily and monthly meter readings.

However, the monitoring report submitted did not have the details of calibrations and internal monitoring details. The verification team raised CAR 2, sub para d and g. Project proponent revised monitoring report incorporating all the details and hence CAR 2 is closed.

The data pertaining to the above parameters are maintained in identified records for the entire

monitoring period. All the data is in compliance with the figures stated in the monitoring report.

3.6 Management and Operational System

The organisational structure includes Manager O & M who is responsible for O & M monitoring and coordinate with O & M contractor for smooth functioning of wind farm. He is also responsible for assessing regular maintenance of monitoring equipments. Chief manger is responsible for conducting the monitoring task strictly as per monitoring manual and registered PDD. He is also responsible for recording the required monitored parameters and to report the monitoring results to Dy. General Manager. Dy. General Manager is responsible for generation of data CDM related monitoring, internal verification and presenting the same to the Executive director. He also verifies if the monitored data is normal. Dy. General Manager calculates the emission reductions regularly and writes the monitoring report. Executive Director is responsible for overall project management. Staff (Officers & Technicians) including staff and teams of O & M contractor at the wind farm was found to be competent.

4 Verification conclusion

The verification scope is an independent and objective review of the VCS Project description, the project's baseline study and monitoring plan and other relevant documents. The review is to verify the implementation of monitoring plan as defined in VCS PD. The period for verification is from 30 September 2007 to 17 June 2009 (inclusive of both the days).

The verification of the monitored data indicates the total amount of emission reductions and the amount for emission reductions for the monitoring period is 382003 tCO₂e.

The calculations of emission reductions are found to be correct. The baseline for the western regional grid has been taken for arriving at emission reductions due to the project activity. The grid emission factor of 0.90105 tCO₂e/MWh was found to be correct.

Appropriate procedures for maintaining the confidentiality and safe custody of the validation or

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verification documentation and for retaining them for a period sufficient to meet the needs of the client, the responsible parties, the GHG programmes to which they subscribe, and in accordance with legal and professional requirements of record retention have been established.

The verification team confirms that the project is implemented as planned and described in the CDM PDD of project reference no. 2347 and VCS PD including revised monitoring plan. The monitoring mechanism is effective and reliable. The reported data are accurate and correct based on all the records provided to the verification team during the verification as provided in annexure-1. The installed equipments being essential for generating the emission reductions run reliably and the measuring equipments/instruments are calibrated appropriately.

Reporting period: From 30-09-2007 to 17-06-2009
Verified emission in the above reporting period:

Project emissions	0	tCO ₂ equivalents
Baseline emissions	382003	tCO ₂ equivalents
Leakage	0	tCO ₂ equivalents
Emission reductions	382003	tCO ₂ equivalents

Dinesh Shetty
Local Product Manager

Annexure - I
Verification Protocol

TABLE 1 VERIFICATION REQUIREMENTS BASED ON THE VALIDATION AND VERIFICATION MANUAL (EB44 ANNEX 3)

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
1 Project implementation in accordance with the registered project design document					
It is assessed if the CDM project activity has been implemented and operated as per the registered PDD¹	VVM	187			
a Are all physical features of the proposed CDM project activity, proposed in the registered PDD, in place?	VVM	188	Yes.		
b Have the project participants operated the proposed CDM project activity as per the registered PDD?	VVM	188	Yes. The project activity is operated and maintained by the O & M contractor as described in registered PDD.	OK	OK
c Is the proposed CDM project implemented against the description in the PDD?	VVM	188	NO.	OK	OK
d Was an on-site visit conducted?	VVM	188	Yes. Bureau Verities Certification team conducted on-site assessment of the project activity from 5 October 2009 to 6 October 2009.	OK	OK
e If not, justify the rationale of the decision.	VVM	188	Not Applicable	OK	OK
2 Compliance of the monitoring plan with the monitoring methodology					

¹ This Q is 'Requirement to be verified' in VVM.

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
It is assessed if the monitoring plan of the proposed CDM project activity is in accordance with the applied methodology	VVM	190			
a Is the validated monitoring plan in accordance with the approved methodology applied by the proposed CDM project activity?	VVM	191	Yes. The monitoring plan is in accordance with the approved methodology applied by the CDM project activity. Monitoring plan is inadequate wrt a. Apportioning the power generation data when the dates (start or end) of monitoring period are not coinciding. The MR is incomplete wrt b. The line diagrams for wind mills are not provided along with the metering system c. The notations provided in the tables under section 3.3 are not matching with those under 3.4. Example: EGWEG d. Details of the meters being monitored at the wind farm and at the substations are not provided. Also, the details on calibration are not indicated in MR. e. All applicable clauses of VCS PD format applicable to registered project activity (project reference no. 2347) as per policy announcement from VCSA dated 19/03/2008 are not mentioned in description of MR. f. Please provide summary of internal monitoring	CAR 2	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			reports as mentioned in the MP of registered PDD of project reference no. 2347. g. Frequency of internal monitoring report is not provided. h. Name of the power purchaser (Grid) mentioned in MR is different at various sections of the same MR. i. Actual schedule of project implementation, erection and commissioning for all WTG (location wise and capacity wise) is not clearly defined j. Title of project activity mentioned in section 1 of MR is not matching with that mentioned elsewhere in the same paragraph and title page of MR and registered PDD wide project reference no. 2347 k. Exact date on which all the WTGs were connected to Suthari substation is not clearly provided. Clarify the discrepancies in dates of connections of all 100 WTGs with Vanku, Suthari and Nani Sindhodi substations as described in MR. l. Line diagrams for windmills are not provided along with metering system.		

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			m. The vintage of emission reduction tabulated / provided in MR is not in line with the start date guidelines of registered PDD of project reference no. 2347 n. Table used for the Data and Parameters monitored is not as per the format provided in VCS PD template. o. There is a mismatch in notations in section 4 of MR in calculations of prorata basis energy generations (apportioning for the last month). p. Test/calibration certificates for all the meters throughout the monitoring period are not available. q. During site visit, it was observed that there have been changes in main meters and check meters at Suthari and Nani Sindhodi substations. The details of the same are not provided in the MR		

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
b If no, was a request for revision of the monitoring plan was done? (The DOE may request for revision of the monitoring plan covering the monitoring period under verification, for approval by the Board)	VVM	192	Not Applicable. The inadequacy in monitoring plan was closed in subsequent closures of CARs / CLs (Refer Table 2)	OK	OK
c Are there any monitoring aspects of the project activity 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)?	VVM	193	No.	OK	OK
3 Compliance of monitoring with the monitoring plan					
It is assessed if monitoring of reductions in GHG emissions to result from the proposed CDM project activity is implemented in accordance with the monitoring plan contained in the registered PDD or the accepted revised monitoring plan¹.	VVM	195			
a Have the monitoring plan and the applied methodology been properly implemented and followed by the project participants?	VVM	196	Yes. The applied methodology and monitoring plan is implemented and followed by project participants. Refer to CAR2 above	OK	OK
b Have all parameters stated in the monitoring plan, the applied methodology and relevant CDM Executive Board decisions been sufficiently monitored and updated as applicable, including:	VVM	196			
i Project emission parameters?	VVM	196	Not Applicable, as there is no project emission happening in this project activity.	OK	OK
ii Baseline emission parameters?	VVM	196	Yes. During site visit it was observed that the data and parameters for the calculation of baseline	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			emissions are monitored as per monitoring plan of registered PDD.		
iii Leakage parameters?	VVM	196	Not Applicable, as there is no project leakage happening in this project activity.	OK	OK
iv 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?	VVM	196	Yes. During the site visit, verification team interviewed the team of project participant and O & M contractors and found that roles and responsibilities for monitoring are being performed as mentioned in the monitoring plan.	OK	OK
c Is the accuracy of equipment used for monitoring in accordance with the relevant guidance provided by the CDM Executive Board and are equipment controlled and calibrated in accordance with the monitoring plan?	VVM	196	During site visit, it was observed that metering layout has been kept on changing from time to time during implementation and stagewise commissioning of WTGs. Refer CAR3 above		
i Are monitoring results consistently recorded as per approved frequency?	VVM	196	Yes. The monitoring results are recorded as per the frequency as described in monitoring plan. The Joint meter reading is taken on monthly basis and internal readings for electricity exported to grid, electricity imported from grid, PF, etc. are taken on daily basis for which the logsheets are maintained.	OK	OK
ii Have quality assurance and quality control procedures been applied in accordance with the monitoring plan monitoring plan?	VVM	196	Yes. The measuring instruments are calibrated regularly.	OK	OK
4 Assessment of data and calculation of greenhouse gas emission reductions					
It is assessed if GHG emission reductions achieved by / resulting from the proposed CDM project activity are calculated applying the selected methodology	VVM	198			

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
a Is a complete set of data for the specified monitoring period is available? (If no, i.e., only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, the DOE shall opt to either make the most conservative assumption theoretically possible in finalizing the verification report, or raise a request for deviation if appropriate).	VVM	199	Yes. A verification team was provided with a complete set of data required to be monitored and monitored throughout the monitoring period in line with registered PDD. VCS PD provides calculation of combined margin emission factor that is used to calculate the baseline emissions.	OK	OK
b Has information provided in the monitoring report been cross-checked with other sources such as plant log books, inventories, purchase records, laboratory analysis?	VVM	199	Yes. The net electricity exported to grid provided in monitoring report has been cross-checked with the share certificates issued by GEDA (Gujarat Energy Development Agency) and found to be correct.	OK	OK
c Have calculations of baseline emissions, proposed CDM 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?	VVM	199	Yes. The calculations of the baseline emissions, project emissions and leakages are calculated as per guidelines provided in approved methodology ACM 0002, Version 07. a. Quantity of emission reduction in MR is not matching with spreadsheet submitted by project proponent. b. As per MR and as observed during site visit by verification team, Nani Sindhodi substation is connected from 3rd July 2009. Though, spreadsheet of ER calculation containing electricity exported to GUVNL mentioned supply from Nani Sindhodi substation for the months Oct 07, Nov 07, Dec 07 and Jan 08. Please clarify.	CAR 3	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			c. Clarify why two parameters i.e. quantity of electricity exported to GUVNL and quantity of electricity imported from GUVNL are not included in MR and ER calculations. d. There are discrepancies in dates in table showing emission reduction calculation in MR. e. Data monitored for quantity of electricity exported to GUVNL and imported from GUVNL are not provided. Please clarify as why these data are not provided in MR		
d Have any assumptions used in emission calculations been justified?	VVM	199	No. There are no assumptions used for the calculation of emissions reductions.	OK	OK
e Have appropriate emission factors, IPCC default values and other reference values been correctly applied?	VVM	199	Yes. For the calculation of the combined margin emission factor, default values from CEA (Central Electricity Authority) was used to arrive the values of Operating Margin Emission Factor and Build Margin Emission Factor as guided by the approved baseline and monitoring methodology.	OK	OK

TABLE 2 RESOLUTION OF CORRECTIVE ACTION / FORWARD ACTION / CLARIFICATION REQUESTS

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
CAR 1 a. Date of VCS PD is not indicated. Titles of PD sections and numbering are not as per the VCS PD formats e.g.: 1.12, 1.13, etc. b. Formatting of the <i>"Title Page"</i> and <i>"Table of Content"</i> with respect to detailed content of the PD is not correct c. Fonts used in each applicable section are not as per the format provided by VCSA. d. Title of the project activity is not indicated in VCS PD.		a. Date of VCS PD is now indicated in the PD. b. Titles of VCS PD and number are also corrected in the PD. c. Fonts are corrected in the PD d. Title is now indicated in the PD	Revised VCS PD is reviewed and found corrected in line with all points of CAR 1. CAR 1 is closed.
CAR 2 Monitoring plan is inadequate wrt a. Apportioning the power generation data when the dates (start or end) of monitoring period are not coinciding. The MR is incomplete wrt b. The line diagrams for wind mills are not provided along with the metering system		a. Monitoring plan is updated for apportioning b. Line diagram is now included in the monitoring plan.	Monitoring plan is revised and has included apportioning. Revised monitoring report includes current line diagram.

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Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
c. The notations provided in the tables under section 3.3 are not matching with those under 3.4. Example: EGWEG d. Details of the meters being monitored at the wind farm and at the substations are not provided. Also, the details on calibration are not indicated in MR. e. All applicable clauses of VCS PD format applicable to registered project activity (project reference no. 2347) as per policy announcement from VCSA dated 19/03/2008 are not mentioned in description of MR. f. Please provide summary of internal monitoring reports as mentioned in the MP of registered PDD of project reference no. 2347. g. Frequency of internal monitoring report is not provided. h. Name of the power purchaser (Grid) mentioned in MR is different at various		c. Notations are now matching for the period. d. Details of the meters monitored are now provided in the monitoring report Annexure 2. e. Correction incorporated in the revised MR. f. Internal monitoring reports have been submitted to the DOE. Summary is now included in MR. g. Frequency of internal monitoring report is six months h. Correction incorporated in the MR	Notations are verified and found correct matching in revised monitoring report. Revised monitoring report includes the all meter details along with calibration details. Revised monitoring report now indicates all applicable clauses. Internal monitoring reports are reviewed and summarised in revised MR. Crosschecked with the summary in MR. Now name of power purchaser is same in all sections.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
sections of the same MR. i. Actual schedule of project implementation, erection and commissioning for all WTG (location wise and capacity wise) is not clearly defined j. Title of project activity mentioned in section 1 of MR is not matching with that mentioned elsewhere in the same paragraph and title page of MR and registered PDD wide project reference no. 2347 k. Exact date on which all the WTGs were connected to Suthari substation is not clearly provided. Clarify the discrepancies in dates of connections of all 100 WTGs with Vanku, Suthari and Nani Sindhodi substations as described in MR. l. Line diagrams for windmills are not provided along with metering system. m. The vintage of emission reduction tabulated / provided in MR is not in line with		i. Project implementation schedule is available in the annexure 1 of the MR. j. Correction incorporated in the MR k. Dates of the WTGs connected to different substations is now available in the annexure 2. l. Line diagram is now available in the MR. m. Correction incorporated in the MR.	Revised MR includes project implementation schedule, which was crosschecked during site visit. Project title in revised MR is correct in line with registered PDD. Annexure 2 of revised MR now provide the details on connections of WTGs with substations. Line diagrams are now provided in revised MR. Vintage of the verification period in now found correct.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
the start date guidelines of registered PDD of project reference no. 2347 n. Table used for the Data and Parameters monitored is not as per the format provided in VCS PD template. o. There is a mismatch in notations in section 4 of MR in calculations of prorata basis energy generations (apportioning for the last month). p. Test/calibration certificates for all the meters throughout the monitoring period are not available. q. During site visit, it was observed that there have been changes in main meters and check meters at Suthari and Nani Sindhodi substations. The details of the same are not provided in the MR		n. Correction incorporated in the MR. o. Correction incorporated in the MR. p. Calibration certificates have been provided for the crediting period. q. The details are now provided in the MR	The table is correctly used as per template in revised MR. Corrections found correct. All calibration certificates are checked for entire crediting period and found that the metering was done by calibrated meters only. Meter change details are provided and checked with calibration details. The same is correct and reflects throughout calibrated meters. CAR 2 is closed.
CAR 3 a. Quantity of emission reduction in MR is not matching with spreadsheet submitted by		a. Correction incorporated in the MR and spreadsheet.	Emission reduction quantity indicated in monitoring report is matching with

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
project proponent. b. As per MR and as observed during site visit by verification team, Nani Sindhodi substation is connected from 3rd July 2009. Though, spreadsheet of ER calculation containing electricity exported to GUVNL mentioned supply from Nani Sindhodi substation for the months Oct 07, Nov 07, Dec 07 and Jan 08. Please clarify. c. Clarify why two parameters i.e. quantity of electricity exported to GUVNL and quantity of electricity imported from GUVNL are not included in MR and ER calculations. d. There are discrepancies in dates in table showing emission reduction calculation in MR.		b. The metering was done at the Suthri substation only. The share certificate is only issued in the name of Nani sindhodi as the metering of Nani Sindhodi line was done at Suthri substation. Finally the metering was shifted from 03/07/2009 to the Nani Sindhodi substation. c. The monitoring is based on the net electricity exported to the GUVNL. This value is taken from the share certificates issued by GEDA. Hence the electricity exported takes in to consideration of the electricity exported and electricity imported from the PP. d. Correction incorporated in the MR.	spreadsheet calculations. Verification team verified these details during site visit. It was observed that generation from Nani Sindhodi was metered at Suthari substation. Currently Nani Sindhodi substation has meters and metering of 46 WTGs is done at this substation. It is in line with monitoring plan of the registered PDD. The there are no discrepancies in ER calculation table.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
e. Data monitored for quantity of electricity exported to GUVNL and imported from GUVNL are not provided. Please clarify as why these data are not provided in MR.		e. The electricity exported and electricity imported by the PP are available in the share certificate issued by the GEDA. The GEDA share certificate reflects the net electricity export, which is monitored by the PP as per the monitoring plan. There is no need for monitoring the electricity export and electricity import.	It is found in line with monitoring plan of registered PDD and as described in monitoring plan of VCS PD. CAR 3 is closed.

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Annexure - II

List of documents reviewed.

Reference	Documents																																																											
PD	VCS Project Document, Version 01, dated 09/09/2009																																																											
PO	Purchase order for supply and commissioning of 150 MW wind power project dated 07/09/2007 and dated 18/09/2007																																																											
HCA	Host country approval letter reference no. 4/24/2007-CCC dated 21/07/2008																																																											
Reg	Proof of registration as CDM Project activity																																																											
Comm	Commissioning Reports for all WTGs (150 MW) throughout the commissioning period																																																											
PPA	Power Purchase Agreements for all WTGs (150 MW)																																																											
VER	VER Calculation Sheet																																																											
MR	Monitoring Report, Version 01, dated 09/09/2009																																																											
Cal	Calibration Certificates for all the main meters and check meters installed at different substations																																																											
TestCer	Test Certificates for all the main meters and check meters installed at different substations																																																											
	Date	Meter Number	Certificate Reference	18/08/2007	GJB00668	MDVSTP0708034	19/06/2009	GJB00667	MDVSTP0906069	17/08/2007	GJB00667	MDVSTP0708032	19/06/2009	GJB00668	MDVSTP0906070	17/08/2007	GJB00669	MDVSTP0708033	18/08/2007	GJB00670	MDVSTP0708035	04/11/2006	GJB00671	MDVSTP0611021	04/11/2006	GJB00672	MDVSTP0611022	04/11/2006	GJB00673	MDVSTP0611023	04/11/2006	GJB00674	MDVSTP0611024	20/08/2007	GJU04622	MDVSTP0708037	20/08/2007	MSE64370	MDVSTP0708036	19/06/2009	GJB00671	MDVSTP0906063	19/06/2009	GJB00672	MDVSTP0906064	19/06/2009	GJB00675	MDVSTP0906067	19/06/2009	GJB00673	MDVSTP0906065	19/06/2009	GJB00676	MDVSTP0906068	19/06/2009	GJB00674	MDVSTP0906066	02/07/2009	MSE64370	MOM dt 02/07/09
	Date	Meter Number	Certificate Reference																																																									
	18/08/2007	GJB00668	MDVSTP0708034																																																									
	19/06/2009	GJB00667	MDVSTP0906069																																																									
	17/08/2007	GJB00667	MDVSTP0708032																																																									
	19/06/2009	GJB00668	MDVSTP0906070																																																									
	17/08/2007	GJB00669	MDVSTP0708033																																																									
	18/08/2007	GJB00670	MDVSTP0708035																																																									
	04/11/2006	GJB00671	MDVSTP0611021																																																									
	04/11/2006	GJB00672	MDVSTP0611022																																																									
	04/11/2006	GJB00673	MDVSTP0611023																																																									
	04/11/2006	GJB00674	MDVSTP0611024																																																									
	20/08/2007	GJU04622	MDVSTP0708037																																																									
	20/08/2007	MSE64370	MDVSTP0708036																																																									
	19/06/2009	GJB00671	MDVSTP0906063																																																									
	19/06/2009	GJB00672	MDVSTP0906064																																																									
	19/06/2009	GJB00675	MDVSTP0906067																																																									
	19/06/2009	GJB00673	MDVSTP0906065																																																									
	19/06/2009	GJB00676	MDVSTP0906068																																																									
	19/06/2009	GJB00674	MDVSTP0906066																																																									
	02/07/2009	MSE64370	MOM dt 02/07/09																																																									

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Sh.Cer.	Share certificates issued by GEDA mentioning net electricity exported to grid for the vintage of monitoring
Receipt	Receipts of all invoices and payments for the net electricity exported to grid for the vintage of monitoring
Inv	Copy of all invoices raised to GUVNL for net electricity exported for the vintage of monitoring
Maint	Maintenance Report/Records for all WTGs (150 MW)
Int.Mon.	Internal Monitoring Reports for the vintage of monitoring
St. App.	Copy of all statutory approvals for the installation and operation of wind mills (150 MW)
LineDia	Line Diagrams of wind mills along with metering system
Breakdown	Details of non-operational days for all wind mills
JMR	Records of JMR

Annexure - III

List of documents available publicly

<i>Reference</i>	<i>Documents</i>
VCD-PD	Guidelines for completion of VCS Project Document
CDM-PDD	Project Design Document as per registered project reference no. 2347
VR	Final validation report as per registered project reference no. 2347
ER	Estimated emission reduction calculation as per registered project reference no. 2347.
Meth	Methodology adopted under CDM registration - ACM0002 - Version 07
Tools	Tools to calculate combined margin emission factor, to demonstrate additionality, etc.
CEA	Central Electricity Authority database for calculation of emission factor

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Annexure – IV

Following persons from various organisations were interviewed during site visit by verification team.

Sr. No.	Name of Person	Name of Organisation
1	Dr. Sanjay Vashishtha (General Manager-Buss. Dev)	DLF Utilities Limited
2	Mr. Kaushik Bhattacharya (Asst. Manager-Buss. Dev)	DLF Utilities Limited
3	Mr. Ujjwal Surana (Dy. Manager – CRM)	Suzlon Infrastructure Services Limited
4	Mr. B. M. Andharia (In- Charge – Nani Sindhodi S/S)	Suzlon Infrastructure Services Limited
5	Mr. Samar (Engineer – Nani Sindhodi S/S)	Suzlon Infrastructure Services Limited
6	Mr. Ajay Mankadia (In- Charge – Vanku S/S)	Suzlon Infrastructure Services Limited
7	Mr. Mehul Sarkhedi (In- Charge – Suthari S/S)	Suzlon Infrastructure Services Limited
8	Mr. Aakash Devkatre (Engineer – Suthari S/S)	Suzlon Infrastructure Services Limited