

VERIFICATION REPORT

ENERCON (INDIA) LIMITED

VERIFICATION OF THE “*BUNDLED WIND ENERGY GENERATION PROJECTS IN GUJARAT, INDIA*”

(Monitoring Period: 01/07/2010 to 31/07/2011, both days included)

REPORT NO.VCS.11.VER.0010



KBS CERTIFICATION SERVICES PVT. LTD.

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Date of first issue: 27/09/2011	Project No.: VCS.11.VER.0010
Project Title: Bundled wind energy generation projects in Gujarat, India	
Client: Enercon (India) Limited	
Summary: KBS Certification Services Pvt. Ltd. has carried out the verification of the Voluntary Emission Reduction (VER) project "Bundled wind energy generation projects in Gujarat, India". During verification process, the implementation of the monitoring plan was found in line to the registered monitoring plan of the VCS PD and as well as to the applied monitoring methodology ACM0002 version 6 dated 18/05/2006. A site visit was conducted to verify the provided data, used in emission reduction calculation, with plant records and to confirm the actual implementation of the project activity on site. The assessment team has concluded that the monitoring of the project activity is in accordance with the registered VCS PD (Project ID 412). The total installed capacity was verified as 59.4 MW, with 75 Wind Turbine Generators installed (72 WTGs of 0.8 MW capacity each and 03 WTGs of 0.6 MW capacity each). The electricity generated from the project activity is exported to the Western Regional Grid connected through Bhogat & Navadra sub-stations. The equivalent electricity would have been generated by fossil- fuel fired power plants in absence of the project activity. The project activity is producing electricity from wind energy (renewable energy) and therefore causing GHG emission reductions as compared to the project baseline scenario (power generated by carbon intensive grid). Based on the information analysed and evaluated it can be concluded that the project has resulted in 110,082 tCO₂e emission reductions (VCUs) during the monitoring period 01/07/2010 to 31/07/2011, including first and last day.	

Report No.: VCS.11.VER.0010		Subject	Group: VCS
Report title: VCS Verification Report			
Work carried out by: Nitin Kumar Sharma Lalit Dagar Shreya Garg			
Work verified by: Kaviraj Singh Ashok K Gautam		Approved by:  Name: Kaushal Goyal Signature:	
Version Number: 01 Date: 10/11/2011		Number of pages: 24	

Abbreviations

BM	Build Margin
CEF	Carbon Emission Factor
CEA	Central Electricity Authority of India
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
EIL	Enercon (India) Limited
GEDA	Gujarat Energy Development Agency
GETCO	Gujarat Energy Transmission Corporation Limited
GHG	Greenhouse gas(es)
GWP	Global Warming Potential
kWh	Kilo Watt hour
MP	Monitoring Plan
MR	Monitoring Report
MWh	Mega Watt hour
OM	Operating Margin
PD	Project Document
PPA	Power Purchase Agreement
UNFCCC	United Nations Framework Convention for Climate Change
VCS	Voluntary Carbon Standards
VCU	Voluntary Carbon Unit
VER	Verified Emission Reductions
WEG	Wind Electric Generator

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1 INTRODUCTION

KBS Certification has been authorised by Enercon (India) Ltd (EIL) to carry out the VCS verification of emission reductions generated by VCS registered project No. 412 “Bundled wind energy generation projects in Gujarat, India” for the period starting from 01/07/2010 to 31/07/2011 (including first and last day). The findings of the verification are included in this report along with the statement for the verified emission reductions.

1.2 Objective

Verification, an independent review, is carried out by the Designated Operational Entity (DOE) (KBS in this case.) for the determination of the reductions in the GHG emissions resulting from the project activity. The verifiers have reviewed the GHG data collected to date for the period starting from 01/07/2010 to 31/07/2011.

1.3 Scope

The scope encompasses verification of the emission reductions, against the VCS standard version 01, resulting from the project activity “Bundled wind energy generation projects in Gujarat, India”.

The aspects covered under the per view of verification are:

- a) Ensure that the project activity has been implemented and operated as per the registered PD and that all physical features (technology, project equipment, and monitoring and metering equipments) of the project are in place.
- b) Ensure that the monitoring report and other supporting documents provided are complete.
- c) Ensure that actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved applied methodology;
- d) Evaluate the data recorded and stored as per the monitoring methodology and registered PD.

1.4 Description of the Project Activity

Project Parties:	Enercon (India) Limited
Title of project activity:	Bundled wind energy generation projects in Gujarat, India
Project Entity:	Enercon (India) Limited



	A-9, Veera Industrial Estate, Veera Desai Road, Andheri (West), Enercon Towers, Mumbai-400053 Telephone: +91-22-66924848 Fax: +91-22 – 67040473 / 66921175
Location of the project activity:	Across villages in Satapar, Okhamadhi, Navadra, Bamnasa, Jodhapar and Kurunga of Jamnagar District in state of Gujarat. (Details provided in annexure 1.)

This project is set up to produce clean power from the wind electric converters which leads to reduced greenhouse gas (GHG) emissions as it displaces electricity from fossil fuel based electricity generation plants. The project activity consists of the 72 machines of Enercon make of 800 kW each and 3 machine of Enercon make of 600 kW, totalling to the capacity of 59.4 MW. The Project harnesses renewable energy resource, displacing non-renewable natural resource usage thereby leading to sustainable economic and environmental development in the region.

The verification is done against the claimed total emission reductions of 110,082 tCO₂e achieved during the monitoring period (01/07/2010 to 31/07/2011, including first and last day).

2 METHODOLOGY

A risk-based verification is carried out to access all the factors and concerns that relate to the issuance of emission reductions from a project activity. They include:

- The review of the calculation of the carbon emission factor for the electricity grid.
- Identification of all the sources contributing to the project emissions and emission reductions.
- Authenticity of the provided data is checked.
- A risk based analysis is carried out to ensure a clear and transparent assessment. The risks involved in this process is mainly with the informational flows and data recording

Verification team

Team Leader : Nitin Kumar Sharma

TA Expert : Lalit Dagar

Verifier : Shreya Garg

2.1 Review of Documentation

In the verification process the validated and registered VCS PD, monitoring report and the supporting documents confirming to the operational quality of the project activity were reviewed.

2.2 Site Visits

A site visit was conducted at both the locations (Bhogat & Navadra) where project activity has been installed. Bhogat has 71 WEGs (56.8 MW) and Navadra has 04 WEGs (2.6MW) totalling a capacity of 59.4 MW. At the project site individual metering points have been installed which is further connected to a bulk/common metering point at the Enercon Sub-station (132 kv- Bhogat Sub-station & 66 kv- Navadra Sub-station).

An on-site inspection was performed by the members of the assessment team to carry out the verification process.

Location: Jamnagar district	
Date: 13/09/2011.	
Scope	Source of information
Electricity generation records (GEDA share	Mr. Navneet Kumar – Deputy Manager, Enercon

certificates)	
Monitoring and measuring system Collection of measurements Observations of established practices Data verification of monitoring parameters.	Mr. Brijesh Kumar – Wind mechanic, Enercon Mr. B.K.Kadegia- Engineer, Enercon
QA/QC procedures, data management, maintenance of data quality, reliability & maintenance practices.	Mr. Brijesh Kumar – Wind mechanic, Enercon Mr. B.K.Kadegia- Engineer, Enercon

2.3 Assessment

For assessment of the project activity different approaches were adopted:

- The review of documents included registered and validated VCS PD, against which the monitoring report is verified. In addition some supporting documents that relate to project performance (like Certificate for share of electricity issued by GETCO^{/6/}, commissioning certificates of the 75 WEGs by GEDA^{/7/} and Calibration certificates^{/8/}.) were reviewed.
- An on-site inspection included verification of the actual implementation of the process mentioned in the VCS PD^{/1/}. The main parameterEGy “Net electricity supplied to the grid by the project” was checked for the calculation of emission reduction. The parameter is obtained from the share certificate for the electricity produced by wind farm issued by GEDA to every customer. The share of each customer is calculated by GEDA which are connected to a particular feeder, the same has been described in the MR^{/2.3/}. Along with this the related personals were interviewed to verify the same information.
- The WEGs for the project activity have been commissioned between June 2004 and September 2006 for which the commissioning certificates^{/7/} have been checked.
- The project activity has been registered under the VCS (Project ID 412) and has correctly applied the CDM methodology ACM0002 version 6, dated 18/05/2006^{/4/} and is also being followed on site.
- The total emission reductions claimed during the monitoring period (01/07/2010 to 31/07/2011) is 110,082tCO₂. The emission reductions are calculated based on the “Net electricity supplied to the grid by the project (EGy), this value was verified from the share certificates by GEDA^{/6/}.



2.4 Reporting of Findings

Verification Findings are established during the verification process after the review of all the documents provided and on-site inspection. Wherever insufficient or inaccurate information is provided it is cross-verified by raising a CL or CAR. These are the two main responses required during the verification process:

- i) If information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met, a clarification request (CL) is raised.
- ii) A Corrective action request (CAR) is raised in case of any ambiguity with regards to
 - VCS requirements have not been met
 - Risk that emission reductions are not being monitored or calculated accurately.

In addition to these a Forward Action Requests (FAR) is issued, where:

- the actual project monitoring and reporting practices requires attention and /or adjustment for the next consecutive verification period, or
- an adjustment of the MP is recommended.

3 VERIFICATION FINDINGS

The risk-based verification was carried out for the project activity “Bundled wind energy generation projects in Gujarat, India” by KBS Certification. Detailed review of the documents and on-site inspection was carried out to cross-verify the claimed emission reductions by the project proponent. Based on assessment, 08 Corrective Action Requests (CARs) and 01 Clarification Request (CL) were raised, details of which are discussed in the forthcoming sections and also attached in Annexure 2.

3.1 Remaining Issues, CARs, FARs from Previous Validation or Verification

The on-site verification confirms that the project has been implemented and installed as described in the registered VCS PD^{1/}. The monitoring plan is inline with the approved consolidated methodology ACM0002 version 6^{4/}, applied to the project activity according to which monitoring is being carried out.

The crediting period mentioned in the registered VCS PD^{1/} starts from 1/06/2004 to 31/12/2006 while issuance is requested for the period 01/07/2010 to 31/07/2011. The issuance period requested does not match with the crediting period of the registered VCS PD^{1/}. CL 02 was raised to clarify this crediting period mentioned in the registered VCS PD^{1/}. In response to the clarification (CL 02), the project proponent (PP) mentioned that the crediting period based on the monitoring period was due to the absence of proper guidelines of VCS Board and PP had selected fix crediting period of 10 years for the project activity from 1/06/2004 to 31/05/2014. It has been verified by the assessment team that the project has been validated and verified for the 1st periodic verification conducted for the period 01/06/2004 to 31/12/2006 by DNV referred to report number 46072030, dated 14/02/2007. The 2nd periodic verification for the project activity was conducted for the period 01/01/2007 to 25/07/2009 by TUV NORD, report number 810614055509/460, dated 05/01/2010. The 3rd verification was conducted by SGS for the period 01/08/2009 to 30/06/2010, report number CCP.VOL0824 issued on 03/06/2011. All the three above mentioned verifications are complete and VER's have been issued for the project activity. Therefore the PP's response that crediting period was fixed for 10 years is accepted. Thus, CL 02 is closed.

3.2 Project Implementation

As per the registered VCS PD version 4, dated 22/05/2007/^{1/} the implementation of the project activity was carried out between the year 2004 and 2006. The first WTG was commissioned in June 2004 and last one in September 2006; these were checked against the respective commissioning certificates/^{7/}.

3.3 Completeness of Monitoring

The monitoring methodology of ACM0002 version 6, dated 18/05/2006/^{4/} is properly being implemented in the monitoring plan mentioned in the registered VCS PD/^{1/} and the MR/^{2.3/} as well as being followed on-site. The monitoring mechanism is inline with the methodology and is effective and reliable. An intense review of the MR/^{2.1/} was carried out along with which personnel involved at various levels of operation of the project activity were interviewed to confirm the implementation of the defined process.

As per the Registered VCS PD, “Net electricity supplied to the grid by the Project (EGy)” is the sole parameter to be monitored for this particular project activity. This is in line with the requirement laid down by ACM 0002, Version 6 that requires monitoring of the electricity generation from the proposed project activity. This methodology also requires cross check measurement results with records for sold electricity which in this case are confirmed with the “Certificate for share of electricity” provided by GEDA, an independent government body.

The meters verified for this particular project activity along with their calibration details are:

Substation	Meter Serial No.	2009	2010
		Calibration date	Calibration date
Bhogat	GJB 00486	25-Feb-2009	23-Nov-2010
	GJU 04121	13-Apr-2009	Meter changed to GJU07452*
	GJU07452	Meter installed on 23 Nov 2010	23-Nov-2010
Navadra	GJB 00267	25-Feb-2009	29-May-2010
	GJB 00269	25-Feb-2009	29-May-2010

The net electricity supplied to the grid from these meters is recorded monthly by taking a Joint Meter Reading (JMR) at individual metering point (33kV & 11kV at project site) along with the bulk/common metering point installed at Enercon Sub-station (132kV –Bhogat & 66kV-Navadra) in the presence of officials from GEDA and Enercon.

CAR 01 was raised relating to the roles and responsibilities of the personnel mentioned in the operational and management structure implemented. This has been clarified by the PP that the meter reading are taken by the representatives from GEDA who are independent, authorised and mandated by the State Government therefore cannot come under the purview of EIL's implemented operational and management structure. Based on this justification CAR 01 was closed out.

"Net electricity supplied to the grid by the Project (EGy)" is the main parameter for the calculation of emission reductions, the unit mentioned for its measurement in the registered VCS PD^{1/} and in the MR version 1 dated 31/08/2011^{2.1/} is MWh, while the unit being used to measure net electricity supplied to the grid on-site is kWh. CAR 03 has been raised for the inconsistency in the unit. In response to this the PP has included a conversion factor (with reference to weblink: <http://convert-to.com/159/energy-units.html>) in the emission reduction sheet version 1.1^{5.2/} and MR version 1.1 dated 26/09/2011^{2.2/}. The unit kWh is used for the on-site measurement which is converted to MWh after applying the conversion factor. This is further used for calculating emission reductions in the ER sheet version 1.1^{5.2/}. These values have been found correct and accurate, considering which the CAR 03 was closed out.

There is inconsistency observed in the MR version 1^{2.1/} with respect to the registered VCS PD^{1/} regarding the feeder lines connecting the WEGs to the Navadra substation. The feeder lines connecting the WEG's to the Navadra substation are at 11kV whereas it was mentioned 220kV in the Monitoring Report version 1^{2.1/}. CAR 04 was raised regarding this informational insymmetry. The inconsistency was resolved in the MR version 1.1^{2.2/} and CAR 04 was closed.

CAR 05 was raised to clarify the informational asymmetry in the on-site observation and the line diagram provided in the MR version 1^{2.1/}. The line diagram has been corrected in the revised MR^{2.2/} pertaining to which CAR 05 was closed.

The Meter Serial No. GJU 00269 of Navadra Substation as mentioned in MR version 1^{2.1/} does not match with the actual meter no. at the sub-station; CAR 06 was raised regarding this. The typo in the meter serial number was corrected in the MR version 1.1^{2.2/} and CAR 06 was closed.

CAR 07 was raised regarding the references for the values of EGy (Net electricity supplied to the grid by the Project) in the Emission reduction sheet version 1^{5.1/} for each month not being available. The reference (GEDA share certificates^{6/}) are included for the monthly values of EGy in the emission reduction sheet version 1.1^{5.2/} and as a result CAR07 was closed out.

The emission reductions claimed in the said monitoring period are significantly higher in comparison to the emission reductions mentioned the registered VCS PD^{1/}, CAR 08 was raised to clarify the same. It was clarified by the PP that the emission reductions during the 1st monitoring period were based on the actual electricity generated and annual estimate of emission reduction was not provided in the absence of proper guidelines of VCS Board in the registered VCS PD. The annual generation of complete one year for all 75 windmills of project activity was also not available during first VCS verification and validation of VCS PD. Hence CAR 08 was closed out. CAR 09 was raised with regards to inconsistency in the value of EGy, Net electricity supplied to the grid by the Project, in the section 3.2 of the MR version 1.1^{2.2/} and the emission reduction sheet version 1.1^{5.2/}. The value of EGy in section 3.2 of MR version 1.2^{2.3/} was corrected, therefore CAR 09 was closed. All the above stated CARs were accepted by the project proponent and incorporated in the Monitoring Report version 1.2 dated 12/10/2011^{2.3/}.

3.4 Accuracy of Emission Reduction Calculations

The general conditions set out for metering, recording, meter readings, meter inspections, test & checking and communication are as per the wheeling and banking agreement with GETCO and GEDA. Each meter is inspected and sealed by an official from GEDA who also takes the meter reading and then translates it in the “Certificate for share of electricity” format, which indicates the net electricity exported. This forms the basis for the calculation of emission reductions.

The change of the meter at the Bhogat sub-station has also been mentioned in the MR. In addition the delay in the calibration in the year 2010 at both (Bhogat & Navadra) sub-stations has been mentioned. There was delay in the calibration until 23rd November 2010 and therefore a conservative approach has been applied in the calculation of emission reductions. The correction factor of 0.5% (meter class) in the generation has been adopted as per “Guidelines for assessing compliance with the calibration frequency requirements”, EB 52, Annex 60. The approach has been accepted by the verification team.

3.5 Quality of Evidence to Determine Emission Reductions

The data parameter used for the determination of Emission Reductions are discussed in section 3.3, all the data provided matches the recorded data and is in compliance with the monitoring report.



3.6 Management System and Quality Assurance

The operation and maintenance of the project activity is carried out by the WTG supplier, Enercon. The monitoring of the project activity is also done by the same entity. It can therefore be concluded that the VCS project along with its management system is in place and properly executed.

4 CALCULATION OF EMISSION REDUCTIONS

Emission reductions (ER) are calculated for the period 1/07/2010 to 31/07/2011 (including first and last day)

As per ACM002 version 6, emission reduction is calculated as follows:

$$\begin{aligned}\text{Baseline emission} &= \text{Net electricity supplied to grid (MWh)} \times \text{Grid emission Factor (tCO}_2\text{/MWh)} \\ &= 117081.655 \text{ (MW h)} \times 0.94022 \text{ (tCO}_2\text{/MWh)}/1000 \\ &= 110,082 \text{ tCO}_2\text{e}\end{aligned}$$

CO₂ emission factor of the grid is 0.94022 tCO₂e/MWh fixed ex-ante.

$$\begin{aligned}\text{Emission Reduction} &= \text{Baseline emissions} - \text{Project emissions} - \text{Leakage emissions} \\ &= 110,082 - 0 - 0 \\ &= \mathbf{110,082 \text{ tCO}_2\text{e}}\end{aligned}$$

Project emission and leakage emissions are taken as zero as per ACM002 version 6, dated 18/05/2006.

Emission reductions- Vintage Break Down		
2010	July 10 – Dec 10	40994 VCUs
2011	Jan 11- Aug 11	69088 VCUs
Total		110,082 VCUs

The total emission reductions (VCUs) achieved during the monitoring period is 110,082 tCO₂.

5 VERIFICATION STATEMENT

KBS Certification has been signed in to carry out the verification of the “Bundled wind energy generation projects in Gujrat, India” by the project participant Enercon (India) Ltd (EIL). The aim was to examine the greenhouse gas (GHG) emission reductions caused by the project activity during the period 1/07/2010 to 31/07/2011(including first and last day) accounting to 110,082 tonnes of CO₂ equivalents. KBS’s responsibility was to produce an unbiased opinion about the project’s GHG emission reductions that were reported.

The GHG emission reduction data for the project activity is prepared by the Enercon (India) Ltd (EIL), briefed in the project Monitoring Report version 1.2 dated 12/10/2011. The emission reductions by the project activity have been claimed for a period 1/07/2010 to 31/07/2011.

The verification was carried out on a risk- based assessment of the reported GHG emission reductions by the project proponent for a period 1/07/2010 to 31/07/2011. An assessment was done to understand the risks associated with the monitoring and reporting of the parameters related to the GHG emission reduction. Sufficient evidence was gathered against the information provided and explanations were requested wherever necessary. The project was assessed for the calculation of the GHG emission reductions caused by the project activity.

The information provided by the project proponent was verified with the support of information provided and the evidence collected at the on-site inspection and is found to be correctly stated. The total emission reductions (VCUs) verified for the above mentioned period is 110,082 tCO₂

6 REFERENCES

/1/	VCS PD Version 4 dated 22/05/2007 https://vcsprojectdatabase1.apx.com/myModule/Interactive.asp?Tab=Projects&a=2&i=412&lat=22%2E011389&lon=69%2E170361&bp=1
/2.1/	Monitoring report version 1 dated 31/08/2011
/2.2/	Monitoring report version 1.1 dated 26/09/2011
/2.3/	Monitoring report version 1.2 dated 12/10/2011
/3.1/	1 st Verification report issued by DNV, report number 46072030 dated 14/02/2007. (Period 01/06/2004 to 31/12/2006)
/3.2/	2 nd Verification Report issued by TUV NORD, report number 8106140555-09/460 dated 05/01/2010. (Period 01/01/2007 to 25/07/2009)
/3.3/	3 rd Verification Report issued by SGS United Kingdom Ltd, report no CCP.VOL0824 dated 03/06/2011. (Period 01/08/2009 to 30/06/2010)
/4/	Approved Consolidated Methodology 002 (ACM002), version 6 dated 18/05/2006.
/5.1/	ER Sheet version 01
/5.2/	ER Sheet version 1.1 (final)
/6/	GEDA Certificates (Certificate for share of electricity)
/7/	Commissioning certificates
/8/	Calibration certificates Bhogat sub-station a. Meter number GJB 00486 dated 25/02/2009 and 23/11/2010 b. Meter number GJU 04121 dated 13/04/2009 c. Meter number GJU 07452 dated 23/11/2010 Navadra sub-station a. Meter number GJB 00267 dated 25/02/2009 and 29/05/2010 Meter number GJB 00269 dated 25/02/2009 and 29/05/2010
/9/	CEA data for emission factor (Version 1.1) www.cea.nic.in/reports/planning/cdm_co2/database_ver1.1.zip



ANNEXURE 1: Detailed location of the wind turbines

S. No.	Name of Customer	Type of M/C	No. of M/C	Capacity (MW)	Site	District	Latitude (Degree, Min., Sec.)	Longitude (Degree, Min., Sec.)
1	Ahmedabad Strips P. Ltd.	0.8	1	0.80	Kurunga	Jamnagar	N22 00 41.0	E69 10 13.3
2	Austin Engineering Co Ltd	0.8	1	0.80	Kurunga	Jamnagar	N22 00 22.5	E69 10 45.6
3	Bhavani Industries	0.8	1	0.80	Navadra	Jamnagar	N21 56 19.2	E69 17 00.7
4	Desai Textiles	0.6	1	0.60	Navadra	Jamnagar	N21 56 28.2	E69 14 21.4
5	Dinesh Mills	0.8	5	4.00	Bamnasa	Jamnagar	N22 05 52.6	E69 12 55.3
							N22 05 38.9	E69 12 54.7
							N22 05 34.5	E69 12 54.2
							N22 05 29.8	E69 12 54.6
							N22 05 25.2	E69 12 55.8
6	Eagle Fibers P. Ltd.	0.8	1	0.80	Kurunga	Jamnagar	N22 00 44.5	E69 10 21.1
7	Echjay Industries Pvt Ltd	0.8	6	4.8	Satapar	Jamnagar	N21 58 31.1	E69 18 24.5
							N21 58 26.3	E69 18 25.3
							N21 58 21.7	E69 18 28.0
							N21 58 16.9	E69 18 29.4
							N21 58 12.2	E69 18 30.1
							N21 58 07.5	E69 18 31.0
8	Empilon Fabrics P. Ltd.	0.8	1	0.80	Navadra	Jamnagar	N21 56 56.9	E69 16 58.1
9	Excel Crop Care Limited	0.8	1	0.80	Navadra	Jamnagar	N21 56 50.6	E69 16 36.9
10	Gujarat Guardian Ltd.	0.8	14	11.20	Bamnasa	Jamnagar	N22 05 47.4	E69 13 12.1
							N22 05 42.7	E69 13 12.4
							N22 05 37.7	E69 13 12.7
							N22 05 32.9	E69 13 13.0
							N22 05 27.9	E69 13 12.3
							N22 05 23.3	E69 13 13.0
							N22 05 18.1	E69 13 13.3
							N22 05 13.0	E69 13 13.7
							N22 05 08.2	E69 13 13.2



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							N22 05 03.1	E69 13 12.8
							N22 04 59.0	E69 13 15.7
							N22 04 53.8	E69 13 13.4
							N22 04 49.3	E69 13 08.7
							N22 05 55.3	E69 13 08.0
	Gujarat Guardian Ltd.	0.8	7	5.6	Kurunga	Jamnagar	N22 02 25.5	E69 09 58.8
							N22 02 19.7	E69 10 04.9
							N22 02 14.0	E69 10 11.1
							N22 02 19.2	E69 10 22.8
							N22 02 30.7	E69 10 10.5
							N22 02 36.4	E69 10 04.4
							N22 02 51.6	E69 10 10.4
	Gujarat Guardian Ltd.	0.8	5	4	Satapar	Jamnagar	N21 58 01.2	E69 18 52.5
							N21 58 05.6	E69 18 51.5
							N21 58 10.7	E69 18 52.4
							N21 58 17.6	E69 18 52.7
							N21 58 35.8	E69 18 22.1
	Gujarat Guardian Ltd.	0.8	3	2.4	Satapar	Jamnagar	N21 58 20.5	E69 18 49.3
							N21 58 45.2	E69 18 18.8
							N21 58 40.5	E69 18 20.4
11	Indo Fashions Pvt. Ltd.*	0.8	1	0.80	Kurunga	Jamnagar	N22 00 24.0	E69 10 29.8
12	Inova Cast Pvt Ltd	0.8	1	0.80	Kurunga	Jamnagar	N22 00 16.7	E69 10 51.7
13	Jagdish Technocast Pvt. Ltd.	0.8	1	0.80	Navadra	Jamnagar	N21 56 15.6	E69 16 42.7
14	Jayant Agro-Organics Limited	0.8	2	1.60	Navadra	Jamnagar	N21 57 06.4	E69 16 52.1
							N21 57 02.7	E69 16 53.8
15	Kanishka Prints P. Ltd.	0.8	1	0.80	Bamnasa	Jamnagar	N22 05 31.1	E69 13 35.6
16	Leamak Healthcare P. Ltd.	0.8	1	0.80	Navadra	Jamnagar	N21 56 49.7	E69 17 00.3
17	Madhusudan Special Solutions	0.8	1	0.80	Satapar	Jamnagar	N21 57 58.0	E69 18 35.0
18	Manish Packaging P. Ltd.	0.8	1	0.80	Kurunga	Jamnagar	N22 02 30.7	E69 09 53.2
19	Mascot Forge Pvt. Ltd.	0.8	1	0.80	Satapar	Jamnagar	N21 58 55.0	E69 18 10.3
20	Nawaz Silk Mill	0.8	1	0.80	Kurunga	Jamnagar	N22 00 34.1	E69 10 33.3



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21	Prabhat Elastomers P. Ltd.	0.8	2	1.6	Kurunga	Jamnagar	N22 00 05.8	E69 10 47.2
							N22 00 13.2	E69 10 39.4
22	Rachana Art Prints Pvt. Ltd.	0.8	1	0.80	Bamnasa	Jamnagar	N22 05 26.9	E69 13 38.4
23	Rajhans Metals Pvt Ltd	0.8	1	0.80	Kurunga	Jamnagar	N22 00 40.6	E69 10 27.8
24	Rajshanti Metals Pvt Ltd	0.8	1	0.80	Navadra	Jamnagar	N22 00 41.2	E69 10 27.9
25	Ravikan Ceramics Pvt. Ltd.	0.8	1	0.80	Navadra	Jamnagar	N21 56 25.4	E69 16 57.1
26	Rivaa Textiles Ltd	0.6	2	1.20	Navadra	Jamnagar	N21 56 40.0	E69 14 30.2
							N21 56 36.7	E69 14 33.2
27	Sayaji Iron & Engineering Co.	0.8	1	0.80	Satapar	Jamnagar	N21 58 24.5	E69 18 46.1
28	Shilp Gravures Ltd.	0.8	1	0.80	Navadra	Jamnagar	N21 56 41.7	E69 17 03.8
29	Shree Sai Calnates India (P) Ltd.	0.8	1	0.80	Navadra	Jamnagar	N21 56 22.2	E69 16 41.0
30	Shreeji Prints Pvt. Ltd.	0.8	2	1.60	Bamnasa	Jamnagar	N22 05 36.2	E69 13 37.9
							N22 05 40.6	E69 13 45.1
31	Surbhi Industries Ltd.	0.8	1	0.80	Kurunga	Jamnagar	N22 00 17.9	E69 10 34.5
32	Transmetal Limited	0.8	1	0.80	Navadra	Jamnagar	N21 56 44.1	E69 16 34.3
33	Unique Tags Private Limited	0.8	1	0.80	Navadra	Jamnagar	N21 56 38.3	E69 16 23.2
34	Zydex Industries	0.8	1	0.80	Satapar	Jamnagar	N21 59 01.0	E69 18 12.6
	Total capacity		75	59.4	MW			

ANNEXURE 2: Findings Tables

Summary of findings	CAR	CL	FAR
	08	01	NA

Date	Type & Number	Raised by	Reference
03/09/2011	CAR 01	Nitin Kumar Sharma/ Lalit Dagar/ Shreya Garg	CDM-D-31
Non conformities raised			
The role of the representatives from GEDA and GETCO is not mentioned in the operational and management structure implemented by Enercon.			
Project participant response		Date: 05/09/2011	
<i>Gujarat Energy Development Agency (GEDA) is the Nodal Agency of the Government of Gujarat for promotion and popularization of Renewable Energy and State Designated Agency for Energy Conservation in the state of Gujarat, India. Gujarat Energy Transmission Corporation Limited (GETCO) is engaged in the business of transmission of electricity in the state of Gujarat, India.</i> <i>Enercon constituted a team for project operation and monitoring purpose. The roles and responsibilities of the representative from operational and management structure is authorized and mandated by Enercon for project monitoring related activities. While, the role of representatives from GEDA and GETCO are independent, authorized and mandated by state government. Therefore role of the representatives from GEDA and GETCO do not come under purview of PP's own implemented operational and management structure.</i>			
Documentation Provided as Evidence by Project Participant			
NA			
Information Verified by Lead Assessor		Date of review: 15/09/2011	
Clarification provided for the non-inclusion of the GEDA and GETCO representatives within the operational and management structure is understood as they are meant to be independent and are the employees of the state government. Hence, the CAR is closed.			
Reasoning for not acceptance or close out			
The roles and responsibilities has been mentioned in the report. CAR clsoed out.			
Date of acceptance or non expectance		Date: 15/09/2011	Status: <i>Closed</i>

Date	Type & Number	Raised by	Reference
03/09/2011	CL 02	Nitin Kumar Sharma/ Lalit Dagar/ Shreya Garg	CDM-D-31
Non conformities raised			
The crediting period mentioned in the PD starts from1 June 2004 to 31 December 2006 while issuance is requested for the period 1 July 2010 to 31 July 2011. The issuance period requested does not match with the crediting period of the PD. Kindly clarify.			
Project participant response		Date: 05/09/2011	
<i>The project activity has been validated and first verification has been conducted for the period of 01/06/2004 to 31/12/2006 under VCS version 1. Project proponent (PP) mentioned the crediting period based on the monitoring period in the absence of proper guidelines of VCS Board. PP selected fix crediting period of 10 years for the project activity from 1 June 2004 to 31May 2014.</i>			
Documentation Provided as Evidence by Project Participant			
NA			
Information Verified by Lead Assessor		Date of review: 15/09/2011	

Reasoning for not acceptance or close out		
The previous three verifications for the same projects are complete and VERs are issued. Therefore PP's response that due to lack of proper guidance on crediting period it was mentioned as 01/06/2004 to 31/12/2006. The previous two verifications also faced same query and PP selected fixed crediting period (10 years) for the project activity The response is accepted and hence the CL is closed.		
Date of acceptance or non acceptance	Date: 15/09/2011	Status: <i>Closed</i>

Date	Type & Number	Raised by	Reference
19/09/2011	CAR 03	Nitin Kumar Sharma/ Lalit Dagar / Shreya Garg	CDM-D-31

Non conformities raised
The unit of the parameter EGy (Net electricity supplied to the grid by project) as per the registered PDD is MWh whereas the unit of measured parameter onsite is kWh. Please maintain the consistency of the unit of parameters used (section 3.2 of the Monitoring report) and maintain the units as per the registered PDD.

Project participant response	Date: 26/09/2011
As per VCS validated and verified Project Document, The unit of net electricity supplied to the grid (EGy) is megawatt hour (MWh). Also, standardized format of monthly share certificate issued by GEDA provides net generation of each customer in MWh. Therefore MWh unit of the parameter EGy (Net electricity supplied) has been consistently used in revised Monitoring report and Emission reduction sheet. However this parameter is recorded in kWh at project site. The conversion of kWh in to MWh is explained below: 1 kilowatt hour (kWh) Equals 1/1000 megawatt hour (MWh) Weblink: http://convert-to.com/159/energy-units.html	

Documentation Provided as Evidence by Project Participant
MR ver 1.1 VCSIV 59.4 MW ER sheet ver 1.1 VCSIV 59.4 MW

Information Verified by Lead Assessor	Date of review: 28/09/2011
The unit of net electricity supplied to the grid (EGy) is MWh as per registered PD whereas it is measured in kWh. The values of EGy have been converted throughout in MWh using a standard conversion factor. This value has been used for calculating the emission reduction in the revised ER sheet version 1.1. The values have been verified and found to be correct and accurate.	

Reasoning for not acceptance or close out		
The inconsistency has been removed.Hence, the required corrections have been made and CAR is closed out.		
Date of acceptance or non expectance	Date:28/09/2011	Status: Closed

Date	Type & Number	Raised by	Reference
19/09/2011	CAR 04	Nitin Kumar Sharma/ Lalit Dagar / Shreya Garg	CDM-D-31

Non conformities raised
The section 3.3 (Description of the Monitoring Plan) of the Monitoring Report is not consistent with the registered PDD and the onsite observation. The feeder lines connecting the WEG's to the Navadra substation are at 11kV whereas it is mentioned 220kV in the Monitoring Report. Please clarify and be consistent with the correct values throughout the Monitoring Report.

Project participant response	Date: 26/09/2011
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<i>As per VCS validated and verified Project Document, The electricity supplied to the grid will be metered at the 132 kV level at the Bhogat substation and at the 66 kV at Navadra substation.</i>		
<i>There are two common metering points for all the 75 WEGs. Out of 75 WEGs, 71 WEGs are connected to Bhogat SS common metering point and 4 WEGs are connected to Navadra SS common metering point. At Bhogat SS, 33kV feeder line is step up to 132 kV and 11 kV feeder line is step up to 66 kV at Navadra SS. Therefore, The feeder lines connecting the WEG's are at 11kV and step up to 66kV at Navadra substation. Section 3.3 (Description of the Monitoring Plan) of the Monitoring Report has been corrected and revised accordingly.</i>		
Documentation Provided as Evidence by Project Participant		
MR ver 1.1 VCSIV 59.4 MW		
Information Verified by Lead Assessor	Date of review: 28/09/2011	
The feeder lines connecting the WEG's are at 11kV and are step up to 66kV at Navadra substation. This has been verified during the site visit and the corrections have been incorporated in the revised Monitoring report version 1.1		
The information provided in section 3.3 now is in line with the actual procedure followed at the project activity site. Hence, the correction have been accepted and the CAR is closed out.		
Reasoning for not acceptance or close out		
The document has been made consistent.		
Date of acceptance or non expectance	Date: 28/09/2011	Status: Closed

Date	Type & Number	Raised by	Reference
19/09/2011	CAR 05	Nitin Kumar Sharma/ Lalit Dagar / Shreya Garg	CDM-D-31
Non conformities raised			
In section 3.3 (Description of the Monitoring Plan) of the Monitoring Report, the line diagram presented is not consistent with the information provided in the registered PDD and the onsite observation. Please clarify and present an appropriate line diagram.			
Project participant response		Date: 26/09/2011	
<i>The line diagram presented in section 3.3 (Description of the Monitoring Plan) of the Monitoring Report has been corrected and revised as per onsite observation and information provided in VCS validated project document.</i>			
Documentation Provided as Evidence by Project Participant			
MR ver 1.1 VCSIV 59.4 MW			
Information Verified by Lead Assessor		Date of review: 28/09/2011	
The line diagram incorporated in revised Monitoring report version 1.1 is in line with the actual metering at both the substation. This line diagram provided in revised MR has been verified during the site visit and is found to be consistent with the actual energy flow and metering points.			
Reasoning for not acceptance or close out			
The inconsistency has been removed. The correction is accepted and the CAR is closed out.			
Date of acceptance or non expectance		Date: 28/09/2011	Status: Closed

Date	Type & Number	Raised by	Reference
19/09/2011	CAR 06	Nitin Kumar Sharma/ Lalit Dagar / Shreya Garg	CDM-D-31
Non conformities raised			
The Meter Serial No.GJU 00269 of Navadra Substation as mentioned in Monitoring Report does not match with the actual meter no. at the substation.			
Project participant response		Date: 26/09/2011	



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As per the actual meter installed and calibration certificates provided, the actual meter no at the substation is GJB 00269. Typographical error has been corrected. The same has been incorporated in revised Monitoring report version 1.1 and Emission reduction sheet version 1.1.

Documentation Provided as Evidence by Project Participant

MR ver 1.1 VCSIV 59.4 MW

ER sheet ver 1.1 VCSIV 59.4 MW

Information Verified by Lead Assessor

Date of review: 28/09/2011

The actual meter number installed at Navadra substation is GJB00269 which has been confirmed during the verification site visit dated 13/09/2011. Moreover, the calibration certificate of the main meter at Navadra substation also provides the same meter no. GJB00269 instead of GJU 0026. Hence, the typographical error is accepted and has been corrected by PP in Monitoring report version 1.1.

Reasoning for not acceptance or close out

The typo error has been corrected. The correction is accepted and the CAR 06 is hence closed.

Date of acceptance or non expectance

Date: 28/09/2011

Status: Closed

Date	Type & Number	Raised by	Reference
19/09/2011	CAR 07	Nitin Kumar Sharma/ Lalit Dagar / Shreya Garg	CDM-D-31

Non conformities raised

The references for the values of **EGy** (Net electricity supplied to the grid by the Project) in the Emission reduction sheet for each month is not available.

Project participant response

Date: 26/09/2011

GEDA certificate reference number for each month has been provided in Emission reduction sheet. A new column has been inserted in Emission reduction work sheet to provide clear reference of substation name and GEDA share certificate. Relevant changes have been made in the revised ER Sheet 1.1.

Documentation Provided as Evidence by Project Participant

ER sheet ver 1.1 VCSIV 59.4 MW

Information Verified by Lead Assessor

Date of review: 28/09/2011

The reference number of GEDA share certificate for each month has been provided in the revised Emission reduction sheet version 1.1. This has been checked and the values verified. Hence, is acceptable and is closed.

Reasoning for not acceptance or close out

The values have been mentioned now. Therefore CAR#07 closed out,

Date of acceptance or non expectance

Date: 28/09/2011

Status: Closed

Date	Type & Number	Raised by	Reference
07/10/2011	CAR 08	Kaviraj Singh	CDM-D-31

Non conformities raised

Emission Reduction claimed under the said monitoring period are considerably higher in comparison to the claimed emission reductions for the period mention in the registered VCS PD.

Project participant response

Date: 12/10/2011

The project activity has been validated and first verification has been conducted for the period of 01/06/2004 to 31/12/2006 under VCS version 1. Project proponent (PP) mentioned the actual emission reduction during the monitoring period. PP did not provided annual estimate of emission reduction in the absence of proper guidelines of VCS Board. Moreover, The first machine under the bundled project activity was commissioned on June 2004 and last machine under the bundled project activity was commissioned on September 2006. The annual generation of



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complete one year for all 75 windmills of project activity was not available during first VCS verification and validation of VCS PD. Therefore the comparison of actual emission reductions with estimates in the PD will not be justified. The same has been explained and reflected in previous monitoring and verification reports. Section 5 of Monitoring report has been revised accordingly.

Documentation Provided as Evidence by Project Participant

MR ver 1.2 VCSIV 59.4 MW

Information Verified by Lead Assessor

Date of review: 14/10/2011

It is understood that the claimed emission reductions during the 1st monitoring period, mentioned in the registered VCS PD were based on the actual electricity generated. Also the 1st verification period is overlapping with the commissioning period of the WTGs, therefore the generation by project activity by all 75 WTGs for a complete year did not take place and hence annual emission reductions by the complete project activity are not available in the registered VCS PD.

Reasoning for not acceptance or close out

CAR 08 has been closed out.

Date of acceptance or non expectance

Date: 14/10/2011

Status: Closed

Date	Type & Number	Raised by	Reference
07/10/2011	CAR 09	Kaviraj Singh	CDM-D-31
Non conformities raised			
There is inconsistency in the value provided for parameter EGy, Net electricity supplied to the grid by the Project, in the Section 3.2 and the Emission Reduction Sheet, Version 1.1.			
Project participant response		Date: 12/10/2011	
The parameter EGy represents net electricity supplied to the grid by the Project activity. The value provided in section 3.2 of monitoring report for the parameter EGy is gross electricity generation. Therefore the error has been corrected and incorporated in revised Monitoring report.			
Documentation Provided as Evidence by Project Participant			
MR ver 1.2 VCSIV 59.4 MW			
Information Verified by Lead Assessor		Date of review: 14/10/2011	
The correct value has been provided in the MR ver 1.2.			
Reasoning for not acceptance or close out			
CAR 09 has been closed out.			
Date of acceptance or non expectance		Date: 14/10/2011	Status: Closed

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