

Bundled Wind Energy Generation Projects in Gujarat,
India

For 2nd Verification Activity

MONITORING REPORT

Monitoring Period: 01/01/2007 to 25/07/2009

(Inclusive of both days)

Version: 2.0

Date: 27/10/2009

Enercon (India) Limited
Enercon Tower, A-9, Veera Industrial Estate, Veera Desai Road,
Andheri West - 400053
Mumbai (Maharashtra)

Project: Bundled Wind Power Projects in Gujarat, India

Version: Version 2.0

Date: 27/10/2009

Standard Followed: VCS 2007.1

Project Participants:

Name of Party involved ((host) indicates a host Party)	Private and/or public entity(ies) project participants (*) (as applicable)	Kindly indicate if the Party involved wishes to be considered as project participant (Yes/No)
Government of India (Host)	Enercon (India) Ltd	No

Project Location:

The Project is spread across villages in Satapar, Navadra, Bamnasa and Kuranga of Jamnagar District in Gujarat.

Monitoring Periods

Start: 1 January 2007

End: 25 July 2009

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A. Project Description:

The project under consideration is set up to produce clean power from the wind electric converters. The generated electricity is wheeled using the state transmission system for captive consumption. The Project leads to reduced greenhouse gas (GHG) emissions because it displaces electricity from fossil fuel based electricity generation plants. The project is helping in bridging the demand supply gap by using wind as a source of generating electrical energy.

The project activity consists of the 72 machines of Enercon make of 800 KW each and 3 machine of Enercon make of 600 KW, totaling to the capacity of 59.4 MW. The Project considered harnesses renewable resources in the region, thereby displacing non-renewable natural resources thereby ultimately leading to sustainable economic and environmental development. Enercon (India) Ltd (“Enercon” or “EIL”) is the equipment supplier and the operations and maintenance contractor for the Project.

B. Project Performance:

The project has generated **237,788,481** kWh of electricity and was supplied to the grid in the monitoring period, which indicates that the project has performed reasonably during the monitoring period (1 January 2007 to 25 July 2009). The details of the net electricity exported to the grid for the monitoring period is detailed as follows:

Sr. No.	Name of Customers	No. of WEG	Total Capacity (KW)	Generation from 1 January 2007 to 31 Dec 2007 (kWh)	Generation from 1 January 2008 to 31 Dec 2008 (kWh)	Generation from 1 January 2009 to 25 July 2009 (kWh)	Total Net Generation (kWh) from 1 January 2007 to 25 July 2009
1	Gujarat Guardian Ltd.	29	23.2	31479193	37609585	22534110	91622888
2	Dinesh Mills	5	4	4681372	6026675	3884917	14592964
3	Rachana Art Prints Pvt. Ltd.	1	0.8	911817	1161010	712497	2785324
4	Kanishka Prints P. Ltd.	1	0.8	880449	1134196	707675	2722320
5	Shreeji Prints Pvt. Ltd.	2	1.6	1856621	2350732	1444924	5652277
6	Manish Packaging P. Ltd.	1	0.8	1291032	1329556	833273	3453861
7	Prabhat Elastomers P. Ltd.	2	1.6	2393471	2525214	1583631	6502316
8	Ahmedabad Strips P. Ltd.	1	0.8	1262231	1331745	852059	3446035
9	Nawaz Silk Mill	1	0.8	1232223	1286499	824466	3343188
10	Indo Fashions Pvt. Ltd.	1	0.8	1183144	1259717	756595	3199456
11	Surbhi Industries Ltd.	1	0.8	1199182	1272968	800574	3272724
12	Rajhans Metals Pvt Ltd	1	0.8	1209448	1286340	767140	3262928
13	Austin Engineering Co Ltd	1	0.8	1242151	1306658	779455	3328264
14	Inova Cast Pvt Ltd	1	0.8	1206946	1355273	801103	3363322
15	Eagle Fibres P. Ltd.	1	0.8	1249509	1302670	792335	3344514

16	Jayant Agro-Organics Limited	2	1.6	2397731	2703153	1512475	6613359
17	Bhavani Industries -Rajkot 1	1	0.8	1172452	1321861	733653	3227966
18	Shree Sai Calnates India (P) Ltd.	1	0.8	1201363	1329536	772040	3302939
19	Shilp Gravures Ltd.	1	0.8	1210088	1371730	765085	3346903
20	Empilon Fabrics P. Ltd.	1	0.8	1183671	1336754	675442	3195867
21	Leamak Healthcare P. Ltd.	1	0.8	1186026	1341193	754363	3281582
22	Ravikan Ceramics Pvt. Ltd.	1	0.8	1168125	1332447	768730	3269302
23	Unique Tags Private Limited	1	0.8	1251228	1441491	843776	3536495
24	Jagdish Technocast Pvt. Ltd.	1	0.8	1179364	1347075	772433	3298872
25	Excel Crop Care Limited	1	0.8	1237869	1449083	829804	3516756
26	Transmetal Limited -1	1	0.8	1171683	1293916	785027	3250626
27	Echjay Industries Pvt Ltd	6	4.8	7049078	8490163	4900424	20439665
28	Sayaji Iron & Engineering Co.	1	0.8	1119971	1331523	722176	3173670
29	Zydex Industries	1	0.8	1207752	1393238	769508	3370498
30	Mascot Forge Pvt. Ltd.	1	0.8	1196027	1407171	836683	3439881
31	Madhusudan Special Solutions	1	0.8	1203245	1461343	842371	3506959
32	Desai Textiles	1	0.6	842301	945350	594651	2382302
33	Rivaa textiles	2	1.2	1655266	1813498	1192936	4661700
34	Rajshanti Metals Pvt Ltd	1	0.8	1093876	1227904	758978	3080758
TOTAL		75	59.4	83005905	96877267	57905309	237788481

C. Project Location:

The Project is spread across villages in Satapar, Navadra, Bamnasa, and Kuranga of Jamnagar District in state of Gujarat. The location of the units is on the micro-siting data to get optimum performance. The latitudinal & longitudinal as well as the unique identification details of individual machines are as given below in the table. The coordinates are as follows:

<u>S. No.</u>	<u>Name of Customer</u>	<u>M/C Model</u>	<u>Type of M/C</u>	<u>No. of M/C</u>	<u>Capacity (MW)</u>	<u>Site</u>	<u>Date of Commissioning</u>	<u>Meter Serial Number</u>	<u>Unique Identification No</u>	<u>Loc. No.</u>	<u>Latitude (Degree, Min., Sec.)</u>	<u>Longitude (Degree, Min., Sec.)</u>
1	Ahmedabad Strips P. Ltd.	E-48	0.8	1	0.80	Kurunga	Dec-05	GJB 00442	EIL/800/05-06/0080	ASPLKRG-01	N22 00 41.0	E69 10 13.3
2	Austin Engineering Co Ltd	E-48	0.8	1	0.80	Kurunga	Dec-05	GJB 00597	EIL/800/05-06/0090	AECLKRG-01	N22 00 22.5	E69 10 45.6
3	Bhavani Industries	E-48	0.8	1	0.80	Navadara	Mar-06	GJB 00602	EIL/800/05-06/0103	BINA-01	N21 56 19.2	E69 17 00.7
4	Dinesh Mills	E-48	0.8	5	4.00	Bamnasa	Mar-05	GJB 00441	EN/800/04-05/0042-0046	SDMLBM-01	N22 05 52.6	E69 12 55.3
										SDMLBM-02	N22 05 38.9	E69 12 54.7
										SDMLBM-03	N22 05 34.5	E69 12 54.2
										SDMLBM-04	N22 05 29.8	E69 12 54.6
										SDMLBM-05	N22 05 25.2	E69 12 55.8
5	Desai Textiles	E-40	0.6	1	0.6	Navadra	June -04	1987044	W3	DTPL-01	N21 56 28.2	E69 14 21.4
6	Eagle Fibres P. Ltd.	E-48	0.8	1	0.80	Kurunga	Feb-06	GJB 00643	EIL/800/05-06/0107	EFPLKRG-01	N22 00 44.5	E69 10 21.1
7	Echjay Industries Pvt Ltd	E-48	0.8	6	4.8	Satapar	Sep-06	GJU 03940	EIL/800/06-07/0162-0167	EIPLSP-01	N21 58 31.1	E69 18 24.5
										EIPLSP-02	N21 58 26.3	E69 18 25.3
										EIPLSP-03	N21 58 21.7	E69 18 28.0
										EIPLSP-04	N21 58 16.9	E69 18 29.4
										EIPLSP-05	N21 58 12.2	E69 18 30.1
										EIPLSP-06	N21 58 07.5	E69 18 31.0
8	Empilon Fabrics P. Ltd.	E-48	0.8	1	0.80	Navadra	Mar-06	GJB 00610	EIL/800/05-06/0121	EFPLNA-01	N21 56 56.9	E69 16 58.1
9	Excel Crop Care Limited	E-48	0.8	1	0.80	Navadra	Mar-06	GJB 00607	EIL/800/05-06/0106	ECCLNA-01	N21 56 50.6	E69 16 36.9
10	Gujarat Guardian Ltd.	E-48	0.8	14	11.20	Bamnasa	Sep-03	GJB 00435	EIL/800/04-05/0029-0041, EIL/800/05-06/0063	GGLBM-01	N22 05 47.4	E69 13 12.1
										GGLBM-02	N22 05 42.7	E69 13 12.4
										GGLBM-03	N22 05 37.7	E69 13 12.7
										GGLBM-04	N22 05 32.9	E69 13 13.0
										GGLBM-05	N22 05 27.9	E69 13 12.3
										GGLBM-06	N22 05 23.3	E69 13 13.0

										GGLBM-07	N22 05 18.1	E69 13 13.3
										GGLBM-08	N22 05 13.0	E69 13 13.7
										GGLBM-09	N22 05 08.2	E69 13 13.2
										GGLBM-10	N22 05 03.1	E69 13 12.8
										GGLBM-11	N22 04 59.0	E69 13 15.7
										GGLBM-12	N22 04 53.8	E69 13 13.4
										GGLBM-13	N22 04 49.3	E69 13 08.7
										GGLBM-14	N22 05 55.3	E69 13 08.0
	Gujarat Guardian Ltd.	E-48	0.8	7	5.6	Kurunga	June 06 and Aug 2006	GJB 00440	EIL/800/06-07/0070-0076	GGLKRG-01	N22 02 25.5	E69 09 58.8
										GGLKRG-02	N22 02 19.7	E69 10 04.9
										GGLKRG-03	N22 02 14.0	E69 10 11.1
										GGLKRG-04	N22 02 19.2	E69 10 22.8
										GGLKRG-05	N22 02 30.7	E69 10 10.5
										GGLKRG-06	N22 02 36.4	E69 10 04.4
										GGLKRG-07	N22 02 51.6	E69 10 10.4
	Gujarat Guardian Ltd.	E-48	0.8	5	4	Satapar	Sep-06	GJU 03937	EIL/800/06-07/0181-0188	GGLSP-01	N21 58 01.2	E69 18 52.5
										GGLSP-02	N21 58 05.6	E69 18 51.5
										GGLSP-03	N21 58 10.7	E69 18 52.4
										GGLSP-04	N21 58 17.6	E69 18 52.7
										GGLSP-08	N21 58 35.8	E69 18 22.1
	Gujarat Guardian Ltd.	E-48	0.8	3	2.4	Satapar	Sep-06	GJB 00644		GGLSP-05	N21 58 20.5	E69 18 49.3
										GGLSP-06	N21 58 45.2	E69 18 18.8
									GGLSP-07	N21 58 40.5	E69 18 20.4	
11	Indo Fashions Pvt. Ltd.	E-48	0.8	1	0.80	Kurunga	Dec-05	GJB 00444	EIL/800/05-06/0086	IFPLKRG-01	N22 00 24.0	E69 10 29.8
12	Inova Cast Pvt Ltd	E-48	0.8	1	0.80	Kurunga	Dec-05	GJB 00596	EIL/800/05-06/0091	ICPLKRG-01	N22 00 16.7	E69 10 51.7
13	Jagdish Technocast Pvt. Ltd.	E-48	0.8	1	0.80	Navadra	Mar-06	GJB 00603	EIL/800/05-06/0104	JTPLNA-01	N21 56 15.6	E69 16 42.7
14	Jayant Agro-Organics Limited	E-48	0.8	2	1.60	Navadra	Mar-06	GJB 00439	EIL/800/05-06/0110-0111	JAOLNA-01	N21 57 06.4	E69 16 52.1
										JAOLNA-02	N21 57 02.7	E69 16 53.8
15	Kanishka Prints P. Ltd.	E-48	0.8	1	0.80	Bamnasa	Aug-05	GJB 00531	EIL/800/05-06/0067	KPPLBM-01	N22 05 31.1	E69 13 35.6

16	Leamak Healthcare P. Ltd.	E-48	0.8	1	0.80	Navadra	Mar-06	GJB 00608	EIL/800/05-06/0120	LHPNA-01	N21 56 49.7	E69 17 00.3
17	Madhusudan Special Solutions	E-48	0.8	1	0.80	Satapar	Mar-06	GJU 04006	EIL/800/06-07/0160	MSSPLSP-01	N21 57 58.0	E69 18 35.0
18	Manish Packaging P. Ltd.	E-48	0.8	1	0.80	Kurunga	Sep-06	GJB 00640	EIL/800/05-06/0122	MPPLKRG-01	N22 02 30.7	E69 09 53.2
19	Mascot Forge Pvt. Ltd.	E-48	0.8	1	0.80	Satapar	Sep-06	GJU 03930	EIL/800/06-07/0168	MFPLSP-01	N21 58 55.0	E69 18 10.3
20	Nawaz Silk Mill	E-48	0.8	1	0.80	Kurunga	Dec-05	GJB 00437	EIL/800/05-06/0084	NSMKRG-01	N22 00 34.1	E69 10 33.3
21	Prabhat Elastomers P. Ltd.	E-48	0.8	2	1.6	Kurunga	Nov-05	GJB 00440	EIL/800/05-06/0072-0073	PEPLKRG-01	N22 00 05.8	E69 10 47.2
										PEPLKRG-02	N22 00 13.2	E69 10 39.4
22	Rachana Art Prints Pvt. Ltd.	E-48	0.8	1	0.80	Bamnasa	Aug-05	GJB 00532	EIL/800/05-06/0066	RACHNB-01	N22 05 26.9	E69 13 38.4
23	Rajhans Metals Pvt Ltd	E-48	0.8	1	0.80	Kurunga	Dec-05	GJB 00599	EIL/800/05-06/0088	RMPLKG-01	N22 00 40.6	E69 10 27.8
24	Rajshanti Metals Pvt Ltd	E-48	0.8	1	0.80	Navadra	Nov-05	GJB 00430	EIL/800/05-06/0078	RMPLNA-01	N22 00 41.2	E69 10 27.9
25	Ravikan Ceramics Pvt. Ltd.	E-48	0.8	1	0.80	Navadra	Mar-06	GJB 00601	EIL/800/05-06/0109	RCPNA-01	N21 56 25.4	E69 16 57.1
26	Rivaa Textiles	E-40	0.6	2	1.2	Navadra	Aug-04	GJB 00284	EN/600/04-05/009-010	RIVAA-01	N21 56 40.0	E69 14 30.2
										RIVAA-02	N21 56 36.7	E69 14 33.2
27	Sayaji Iron & Engineering Co.	E-48	0.8	1	0.80	Satapar	Sep-06	GJU 03927	EIL/800/06-07/0169	SIECLSP-01	N21 58 24.5	E69 18 46.1
28	Shilp Gravures Ltd.	E-48	0.8	1	0.80	Navadra	Mar-05	GJB 00609	EIL/800/05-06/0119	SGLNA-01	N21 56 41.7	E69 17 03.8
29	Shree Sai Calnates India (P) Ltd.	E-48	0.8	1	0.80	Navadra	Mar-06	GJB 00604	EIL/800/05-06/0108	SSCPLNA-01	N21 56 22.2	E69 16 41.0

30	Shreeji Prints Pvt. Ltd.	E-48	0.8	2	1.60	Bamnasa	Feb-07	GJB 00533	EIL/800/05-06/0064-0065	SHREEBM-01	N22 05 36.2	E69 13 37.9
										SHREEBM-02	N22 05 40.6	E69 13 45.1
31	Surbhi Industries Ltd.	E-48	0.8	1	0.80	Kurunga	Aug-05	GJB 00438	EIL/800/05-06/0085	SILKRG-01	N22 00 17.9	E69 10 34.5
32	Transmetal Limited	E-48	0.8	1	0.80	Navadra	Dec-05	GJB 00606	EIL/800/05-06/0105	TLNA-01	N21 56 44.1	E69 16 34.3
33	Unique Tags Private Limited	E-48	0.8	1	0.80	Navadra	Mar-06	GJB 00605	EIL/800/05-06/0102	UTPLNA-01	N21 56 38.3	E69 16 23.2
34	Zydex Industries	E-48	0.8	1	0.80	Satapar	Mar-06	GJU 04005	EIL/800/06-07/0189	DEXSP-01	N21 59 01.0	E69 18 12.6
	Total capacity			75	59.4	MW						

D. Project Reference:

Title of the project	: Bundled Wind Power project in Gujarat managed by Enercon India Limited
Project activity scale	: Large
Sectoral scope	: Sector 1- Consolidated baseline methodology for grid-connected electricity generation from renewable sources”
Approved baseline Methodology	: ACM 0002 Version 6 (19 May 2006)
Approved monitoring methodology	: ACM 0002 Version 6 (19 May 2006)

E. Monitoring Information:

The general conditions set out for metering, recording; meter readings, meter inspections, Test & Checking and communication are as per the Wheeling agreement with Gujarat Electricity Transmission Corporation Limited (GETCO).

Metering System:

Project activity has the dedicated metering system and there are no other WEGs connected to the joint meters of the project activity. Net electricity supplied to grid will be measured through meter readings of the two-way export meter installed by GEDA. The installed meters measure the electricity export and electricity import for each WEG or group of WEGs of the project which are designated by unique identification no. i.e. Meter Serial No. The monthly meter reading is taken jointly by the GEDA official and Enercon's site official for the last month.

Metering Equipment:

Metering equipment is electronic trivector meter of accuracy class **0.5%** required for the Project. Dedicated core of both CT's and PT's of required accuracy is made available by the EIL to GEDA.

If during the tests, the meter is found to be beyond the permissible limits of error, the meter shall be immediately calibrated and the correction applied to the reading registered by the meter to arrive the correct reading of energy supplied for billing purposes for the period from the last month's meter reading up to the current test. Billing for the period thereafter till the next monthly reading shall be as per the calibrated meter.

Calibration of instruments:

The meters installed at the wind farm are as per GEDA guidelines and accuracy level. The meters are checked for accuracy on a regular basis. GEDA meter testing is done by a separate division of electricity board, which takes care of meter testing in the event of any abnormality observed.

Archiving of data:

Data shall be archived for 20 years (operational lifetime) + 2 years.

F. Monitoring Parameters:

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. Representatives of GEDA (Gujarat Energy Development Agency) on behalf of GETCO (Gujarat Energy Transmission Corporation Limited) and Enercon will jointly take the main meter reading and sign the meter reading every month. Enercon has also installed the meters for each customer, which is sealed in presence of representatives of Enercon and GEDA (Gujarat Energy Development Agency). This value of the monthly joint meter reading of the EIL substation is then apportioned to the GEDA (Gujarat Energy development Agency) reading taken for each customer to get the net supply of electricity to the grid for that particular customer. The share certificate is signed by the GEDA (Gujarat Energy development Agency) officials, which is used to produce invoice on behalf of the customer. The meters will be jointly inspected/ tested once in a year as per the terms of the Wheeling arrangement. Joint inspection and testing will also be carried out as and when difference in monthly meter readings exceeds the sum of maximum error as per accuracy class of main and back up meters. In case the meters are found to operate outside the permissible limits, the meters will be either replaced immediately or calibrated. Metering equipment is an electronic trivector meter of accuracy class 0.5 required for the Project. At the conclusion of each meter reading an appointed representative of GEDA and Enercon sign a document indicating the number of Kilowatt-hours indicated by the meter.

Meter Details:

<u>S. No.</u>	<u>Name of Customer</u>	<u>Meter Serial Number</u>	<u>Type of meter</u>	<u>Date of Commissioning</u>
1	Ahmedabad Strips P. Ltd.	GJB 00442	Secure	Dec-05
2	Austin Engineering Co Ltd	GJB 00597	Secure	Dec-05
3	Bhavani Industries	GJB 00602	Secure	Mar-06
4	Dinesh Mills	GJB 00441	Secure	Mar-05
5	Desai Textiles	1987044	L & T	June-04
6	Eagle Fibres P. Ltd.	GJB 00643	Secure	Feb-06
7	Echjay Industries Pvt Ltd	GJU 03940	Secure	Sep-06
8	Empilon Fabrics P. Ltd.	GJB 00610	Secure	Mar-06
9	Excel Crop Care Limited	GJB 00607	Secure	Mar-06

10	Gujarat Guardian Ltd.	GJB 00435	Secure	Mar-09
	Gujarat Guardian Ltd.	GJB 00440	Secure	Jul-06
	Gujarat Guardian Ltd.	GJU 03937	Secure	Jul-06
	Gujarat Guardian Ltd.	GJB 00644	Secure	Sep-06
11	Indo Fashions Pvt. Ltd.	GJB 00444	Secure	Dec-05
12	Inova Cast Pvt Ltd	GJB 00596	Secure	Dec-05
13	Jagdish Technocast Pvt. Ltd.	GJB 00603	Secure	Mar-06
14	Jayant Agro-Organics Limited	GJB 00439	Secure	Mar-06
15	Kanishka Prints P. Ltd.	GJB 00531	Secure	Aug-05
16	Leamak Healthcare P. Ltd.	GJB 00608	Secure	Mar-06
17	Madhusudan Special Solutions	GJU 04006	Secure	Mar-06
18	Manish Packaging P. Ltd.	GJB 00640	Secure	Sep-06
19	Mascot Forge Pvt. Ltd.	GJU 03930	Secure	Sep-06
20	Nawaz Silk Mill	GJB 00437	Secure	Dec-05
21	Prabhat Elastomers P. Ltd.	GJB 00440	Secure	Nov-05
22	Rachana Art Prints Pvt. Ltd.	GJB 00532	Secure	Aug-05
23	Rajhans Metals Pvt Ltd	GJB 00599	Secure	Dec-05
24	Rajshanti Metals Pvt Ltd	GJB 00430	Secure	Nov-05
25	Ravikan Ceramics Pvt. Ltd.	GJB 00601	Secure	Mar-06
26	Rivaa Textiles	GJB 00284	Secure	Aug-04
27	Sayaji Iron & Engineering Co.	GJU 03927	Secure	Sep-06
28	Shilp Gravures Ltd.	GJB 00609	Secure	Mar-05
29	Shree Sai Calnates India (P) Ltd.	GJB 00604	Secure	Mar-06
30	Shreeji Prints Pvt. Ltd.	GJB 00533	Secure	Feb-07
31	Surbhi Industries Ltd.	GJB 00438	Secure	Aug-05
32	Transmetal Limited	GJB 00606	Secure	Dec-05
33	Unique Tags Private Limited	GJB 00605	Secure	Mar-06
34	Zydex Industries	GJU 04005	Secure	Mar-06

The calibration of the meters is as per the GEDA standards and latest calibration of meters connected at Bhogat Substation took place on 24 January 2009 for individual customer's meters. The details of main meters at the substation are as follows:

Substation location	Meter No	Calibration date
Bhogat	GJB 00486	25/02/09
	GJU 04121	20/04/07

		13/04/09
Navadra	GJ-2029	28/05/09
	GJ-2060	28/05/09

Monitoring Parameters:

The monitoring parameter is given in the following table

Data / Parameter:	EGy,
Data unit:	kWh/year
Description:	Net Electricity supplied to the grid by the projects
Source of data to be used:	Certification of metering records and share certificate for electricity produced by wind farm provided by GEDA (Gujarat Energy Development Agency)
Value of data:	2007: 83,005,905 kWh 2008: 96,877,267 kWh 2009: 57,905,309 kWh
Brief description of measurement methods and procedures to be applied:	Net electricity supplied to grid is measured by main meters (export and import) at the Metering Point.
QA/QC procedures applied:	QA/QC procedure is elaborated in section F :Monitoring Parameter
Any comment:	The meter testing and checking procedures that are solely within the purview of GEDA on behalf of GETCO (Gujarat Energy Transmission Corporation Limited), i.e., frequency of testing of main/check meters, quality and standards of portable meter testing equipment, testing and calibration of portable meter testing equipment using a meter testing bench, testing and calibration of meter testing bench, etc. are outside the purview of the monitoring plan for the Projects.

G. Emission Reduction Calculation:

Grid emission factor:

The emission factor for the Western grid has been calculated *ex ante* as **940.22 tCO₂e/ GWh** (As per the value of registered PDD and Central Electricity Authority data) and it does not require monitoring.

Emission Reduction Calculations:

As per methodology ACM0002 version: 6 the emission reduction **ER_y** is calculated as:

$$ER_y = BE_y - PE_y - L_y \dots\dots\dots (1)$$

BE_y is the baseline emissions

PE_y is project activity emissions and;

L_y is the amount of emissions leakage resulting from the project activity

Project emissions: The project involves the operation of a zero-emission wind farm, so

$$PE_y = 0$$

There is no leakage to this project so $L_y = 0$

Thus, $ER_y = BE_y$

i.e. the emission reductions are the baseline emissions in this project.

$$BE_y = EG_y * EF_y \dots\dots\dots (2)$$

Where, EG_y is the net electricity supplied to the grid,

EF_y is the CO₂ emission factor of the grid and is been calculated ex-ante

Electricity supplied to the grid by the Projects is set out below:

Sr No.	Project Name	Generation in kWh (1 January 2007 to 25 July 2009)
1	Bundled Wind Power projects in Gujarat, India	237,788,481
	Total Electricity Supplied	237,788,481

As per VCS registered PD, $EF_y = 0.94022 \text{ tCO}_2/\text{MWh}$.

Accordingly: Emission reduction (ER) calculation **for the period 1 January 2007 to 25 July 2009:**

$$ER = 237,788,481 \text{ (kWh)} * 0.94022(\text{tCO}_2/\text{MWh})/1000$$

$$= 223,573 \text{ tCO}_2\text{e}$$

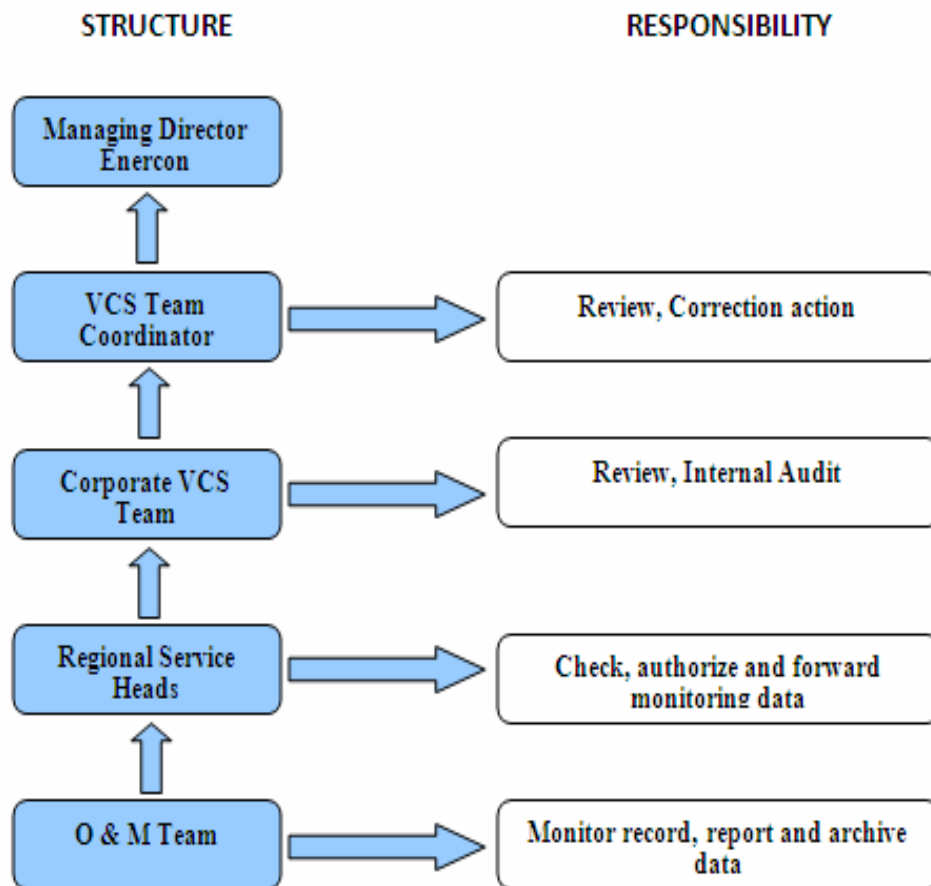
Total Emission Reductions for the period 1 January 2007 to 25 July 2009:

$$= 223,573 \text{ tCO}_2\text{e}$$

Year	Estimation of project activity emissions (tonnes of CO ₂ e)	Estimation of baseline emissions (tonnes of CO ₂ e)	Estimation of leakage (tonnes of CO ₂ e)	Estimation of overall emission reductions (tonnes of CO ₂ e)
2007	0	78,044	0	78,044
2008	0	91,086	0	91,086
2009	0	54,444	0	54,444
Total from 1 January 07 to 25 July 09 (tonnes of CO₂e)	0	223,573	0	223,573

H. Roles and Responsibility:

The Project is operated and managed by Enercon (India) Ltd. The operational and management structure implemented by Enercon is as follows:



Annex 1: Contact Information on Participants in the Project Activity

Organization:	Enercon (India) Limited
Street/P.O.Box:	A-9, Veera Industrial Estate, Veera Desai Road, Andheri West
Building:	Enercon Tower
City:	Mumbai
State/Region:	Maharashtra
Postfix/ZIP:	400 053
Country:	India
Telephone:	+91-22-6692 4848
FAX:	+91-22 - 67040473 / 66921175
E-Mail:	Ajay.Mehra@enerconindia.net
URL:	www.enerconindia.net
Represented by:	
Title:	Managing Director
Salutation:	Mr.
Last Name:	Mehra
Middle Name:	
First Name:	Ajay
Department:	Corporate
Mobile:	
Direct FAX:	+91-22-6692 1177
Direct tel:	+91-22-6702 2832
Personal E-Mail:	Ajay.Mehra@enerconindia.net