



MONITORING REPORT FORM (F-CDM-MR)
Version 02.0

MONITORING REPORT

Title of the project activity	Enercon Wind Farms in Karnataka Bundled Project – 73.60 MW
Reference number of the project activity	1286
Version number of the monitoring report	1
Completion date of the monitoring report	09/07/2012
Registration date of the project activity	01/07/2010
Monitoring period number and duration of this monitoring period	Second, 01/08/2011-31/05/2012
Project participant(s)	Enercon (India) Limited, Japan Carbon Finance Ltd.
Host Party(ies)	Govt. of India (Host) Govt. of Japan
Sectoral scope(s) and applied methodology(ies)	Energy industries (renewable/ non-renewable sources). 'Consolidated baseline methodology for grid-connected electricity generation from renewable sources', ACM0002, Version 06 and 'consolidated monitoring methodology for zero-emissions grid-connected electricity generation from renewable sources', ACM0002, Version 06
Estimated amount of GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period in the registered PDD	132703
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period	97101

**SECTION A. Description of project activity****A.1. Purpose and general description of project activity**

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- (a) *Purpose of the project activity and the measures taken for GHG emission reductions or net anthropogenic GHG removals by sinks;*

The objective of project is development, design, engineering, procurement, finance, construction, operation and maintenance of Enercon Wind Farm (Krishna) Ltd 15 MW, Enercon Wind Farm (Karnataka) Ltd 3.2 MW and other wind power projects of 55.40 MW capacity (“Project”) in the Indian state of Karnataka to provide reliable, renewable power to the Karnataka state electricity grid which is part of the Southern regional electricity grid. The Project will lead to reduced greenhouse gas emissions because it displaces electricity from fossil fuel based electricity generation plants.

- (b) *Brief description of the installed technology and equipments;*

The Project involves 52 wind energy converters (WECs) of Enercon make E-40 (600 kW) and 53 WECs of Enercon make E-48 (800 kW) totaling to 105 WECs.

Enercon (India) Ltd (EIL) is the turbine supplier and is the operations and maintenance contractor.

- (c) *Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.);*

The WECs under the project activity were commissioned between 24th September 2004 and 4th May 2006. The expected operational lifetime of the project is for 20 years. The project activity was registered as CDM project on 1st July 2010. The first monitoring period is from 1st July 2010 to 31st July 2011. The second monitoring period (current one) is from 1st August 2011 to 31st May 2012.

- (d) *Total GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period.*

The total emission reductions achieved under this monitoring period (1st August 2011 to 31st May 2012) are **97101 tCO₂**.

A.2. Location of project activity

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- (a) *Host Party(ies);*

India

- (b) *Region/State/Province, etc.;*

Karnataka State

- (c) *City/Town/Community, etc.;*

The project activity is located in the Chitradurga & Gadag Districts in the state of Karnataka, India.

- (d) *Physical/ Geographical location.*

Table-1:

S	Name of	Indiv	Site	R.R.N	Latitude	Longitude
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No.	Customer	idual Capa city		O.	Deg	Min utes	Secon d	Deg	Minute s	Secon d
1	Neharaj Energy	0.8	GIM-II	ELP-2	13	58	15.3	76	28	31.7
2	Vivek Trading Company	0.8	GIM-II	ELP-11	13	58	57.0	76	28	9.4
3	Jubilee Textiles	0.8	GIM-II	ELP-3	13	58	17.8	76	28	28.8
4	Prasad Technology Park	0.8	GIM-II	ELP-18	13	59	26.5	76	27	57.6
5	Prasad Technology Park	0.8	GIM-II	ELP-18	13	59	26.5	76	27	57.6
6	Srinivasa Cystine Ltd	0.8	GIM-II	ELP-5	13	58	26.0	76	28	23.2
7	Srinivasa Cystine Ltd	0.8	GIM-II	ELP-5	13	58	26.0	76	28	23.2
8	Avanti Feeds Ltd	0.8	GIM-II	ELP-4	13	58	20.7	76	28	26.1
9	Avanti Feeds Ltd	0.8	GIM-II	ELP-4	13	58	20.7	76	28	26.1
10	Avanti Feeds Ltd	0.8	GIM-II	ELP-4	13	58	20.7	76	28	26.1
11	Avanti Feeds Ltd	0.8	GIM-II	ELP-4	13	58	20.7	76	28	26.1
12	Siddaganga Oil Extractions Ltd.	0.8	GIM-II	ELP-32	13	59	37.9	76	25	37.8
13	Siddaganga Oil Extractions Ltd.	0.8	GIM-II	ELP-32	13	59	37.9	76	25	37.8
14	Unnathi Projects Ltd	0.8	Vanivil as Sagar	VVS 36	13	50	31.96	76	29	52.94
15	Unnathi Projects Ltd	0.8	Vanivil as Sagar	VVS 36	13	50	31.96	76	29	52.94
16	Unnathi Projects Ltd	0.8	Vanivil as Sagar	VVS 36	13	50	31.96	76	29	52.94
17	B.V.Finance and Leasing	0.8	GIM-II	ELP-6	13	58	29.3	76	28	21.2
18	B.V.Finance and Leasing	0.8	GIM-II	ELP-6	13	58	29.3	76	28	21.2
19	Shilpa Medicare Ltd	0.6	Vanivil as Sagar	VVS 41	13	50	14.50	76	29	57.73
20	Shilpa Medicare Ltd	0.6	Vanivil as Sagar	VVS 41	13	50	14.50	76	29	57.73



21	Cooper Foundry	0.6	Vanivil as Sagar	VVS 26	13	51	7.38	76	29	38.29
22	Cooper Foundry	0.6	Vanivil as Sagar	VVS 26	13	51	7.38	76	29	38.29
23	Cooper Foundry	0.6	Vanivil as Sagar	VVS 26	13	51	7.38	76	29	38.29
24	Cooper Foundry	0.6	Vanivil as Sagar	VVS 26	13	51	7.38	76	29	38.29
25	I. G. E. (India)	0.6	Vanivil as Sagar	VVS 40	13	50	18.46	76	29	56.65
26	International Conveyors Ltd	0.6	Vanivil as Sagar	VVS 38	13	50	25.62	76	29	54.56
27	Jitendra D. Majetha	0.6	Vanivil as Sagar	VVS 31	13	50	51.90	76	29	45.13
28	Patel Shanti Steels P. Ltd.	0.6	Vanivil as Sagar	VVS 21	13	51	23.26	76	29	34.12
29	Patel Shanti Steels P. Ltd.	0.6	Vanivil as Sagar	VVS 32	13	50	49.49	76	29	46.25
30	Swaraj PVC Pipes P. Ltd.	0.6	Vanivil as Sagar	VVS 39	13	50	21.95	76	29	55.82
31	Amrit Bottlers	0.8	GIM-II	ELP 13	13	59	7.2	76	27	58.2
32	Amrit Bottlers	0.6	Vanivil as Sagar	VVS 42	13	50	10.82	76	29	58.70
33	Amrit Bottlers	0.6	Vanivil as Sagar	VVS 42	13	50	10.82	76	29	58.70
34	Brindavan Agro	0.6	Vanivil as Sagar	VVS 33	13	50	41.96	76	29	48.12
35	Brindavan Agro	0.6	Vanivil as Sagar	VVS 33	13	50	41.96	76	29	48.12
36	Brindavan Agro	0.8	GIM-II	ELP-7	13	58	35.5	76	28	23.3
37	Brindavan Agro	0.8	GIM-II	ELP-7	13	58	35.5	76	28	23.3
38	Brindavan Agro	0.8	GIM-II	ELP-7	13	58	35.5	76	28	23.3
39	Brindavan Agro	0.8	GIM-II	ELP-7	13	58	35.5	76	28	23.3



40	Rohit Surfactants Pvt Ltd	0.6	Vanivil as Sagar	VVS 27	13	51	4.07	76	29	39.26
41	Rohit Surfactants Pvt Ltd	0.6	Vanivil as Sagar	VVS 27	13	51	4.07	76	29	39.26
42	Rohit Surfactants Pvt Ltd	0.6	Vanivil as Sagar	VVS 27	13	51	4.07	76	29	39.26
43	Rohit Surfactants Pvt Ltd	0.6	Vanivil as Sagar	VVS 27	13	51	4.07	76	29	39.26
44	Rohit Surfactants Pvt Ltd	0.6	Vanivil as Sagar	VVS 27	13	51	4.07	76	29	39.26
45	Rohit Surfactants Pvt Ltd	0.6	Vanivil as Sagar	VVS 27	13	51	4.07	76	29	39.26
46	Rohit Surfactants Pvt Ltd	0.6	Vanivil as Sagar	VVS 27	13	51	4.07	76	29	39.26
47	Rohit Surfactants Pvt Ltd	0.6	Vanivil as Sagar	VVS 27	13	51	4.07	76	29	39.26
48	Rohit Surfactants Pvt Ltd	0.6	Vanivil as Sagar	VVS 27	13	51	4.07	76	29	39.26
49	Rohit Surfactants Pvt Ltd	0.6	Vanivil as Sagar	VVS 27	13	51	4.07	76	29	39.26
50	Unnathi Projects Ltd	0.8	GIM-II	ELP-19	13	59	33.3	76	27	52.8
51	Primetex Apparels India	0.6	Vanivil as Sagar	VVS 24	13	51	14.58	76	29	36.92
52	MK Agrotech Private Ltd	0.6	Vanivil as Sagar	VVS 43	13	50	8.41	76	29	59.10
53	MK Agrotech Private Ltd	0.6	Vanivil as Sagar	VVS 43	13	50	8.41	76	29	59.10
54	Laxmi Organics	0.6	Vanivil as Sagar	VVS 25	13	51	11.02	76	29	37.46
55	Laxmi Organics	0.6	Vanivil as Sagar	VVS 25	13	51	11.02	76	29	37.46
56	S.E.Investment	0.8	Vanivil as Sagar	VVS 35	13	50	37.68	76	29	55.46
57	S.E.Investment	0.8	Vanivil as	VVS 35	13	50	37.68	76	29	55.46



			Sagar							
58	S.E.Investment	0.8	Vanivil as Sagar	VVS 35	13	50	37.68	76	29	55.46
59	Dinesh Pouches	0.8	EP-II	EP2-26	13	59	23.9	76	18	46.6
60	UshDev International	0.8	EP-II	EP2-24	13	59	14.6	76	18	49.1
61	UshDev International	0.8	EP-II	EP2-24	13	59	10.9	76	18	50.6
62	Mumbai Stock Brokers Pvt. Ltd.	0.8	Gim-II	ELP- 21	13	59	41.6	76	27	52.6
63	D. R. Container Terminal	0.8	Gim-II	ELP- 22	13	59	45.1	76	27	50.7
64	D. R. Container Terminal	0.8	GIM-II	ELP- 22	13	59	45.1	76	27	50.7
65	Indian Power Corporation Ltd	0.8	GIM-II	ELP- 15	13	59	15.1	76	27	57.5
66	Indian Power Corporation Ltd	0.8	GIM-II	ELP- 15	13	59	15.1	76	27	57.5
67	Indian Power Corporation Ltd	0.8	GIM-II	ELP- 15	13	59	15.1	76	27	57.5
68	Indian Power Corporation Ltd	0.8	GIM-II	ELP- 16	13	59	18.7	76	27	57.9
69	Indian Power Corporation Ltd	0.8	GIM-II	ELP- 16	13	59	18.7	76	27	57.9
70	Indian Power Corporation Ltd	0.8	GIM-II	ELP- 16	13	59	18.7	76	27	57.9
71	Indian Power Corporation Ltd	0.8	GIM-II	ELP- 16	13	59	18.7	76	27	57.9
72	Indian Power Corporation Ltd	0.8	GIM-II	ELP- 16	13	59	18.7	76	27	57.9
73	Indian Power Corporation Ltd	0.8	GIM-II	ELP- 16	13	59	18.7	76	27	57.9
74	Indian Power Corporation Ltd	0.8	GIM-II	ELP- 26	13	59	50.0	76	27	25.1
75	Indian Power Corporation	0.8	GIM-II	ELP- 26	13	59	50.0	76	27	25.1



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76	Indian Power Corporation Ltd	0.8	GIM-II	ELP-26	13	59	50.0	76	27	25.1
77	Indian Power Corporation Ltd	0.8	GIM-II	ELP-26	13	59	50.0	76	27	25.1
78	Enercon Wind Farms (Karnataka) Ltd	0.8	Gadag	EWKL H-7	15	12	48.50	75	43	31.80
79	Enercon Wind Farms (Karnataka) Ltd	0.8	Gadag	EWKL H-7	15	12	41.80	75	43	50.50
80	Enercon Wind Farms (Karnataka) Ltd	0.8	Gadag	EWKL H-7	15	12	38.70	75	43	52.30
81	Enercon Wind Farms (Karnataka) Ltd	0.8	Gadag	EWKL H-7	15	12	35.30	75	43	55.60
82	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	13	14.10	75	44	23.70
83	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	13	9.40	75	44	23.30
84	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	13	6.20	75	44	21.80
85	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	13	3.60	75	44	20.10
86	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	13	0.10	75	44	19.50
87	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	12	54.90	75	44	18.40
88	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	12	52.10	75	44	19.30
89	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	12	49.10	75	44	18.00
90	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	12	45.40	75	44	20.00



91	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	12	42.00	75	44	20.40
92	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	12	27.40	75	44	4.60
93	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	12	24.30	75	44	3.60
94	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	12	21.00	75	44	2.70
95	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	12	17.00	75	43	58.00
96	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	12	13.30	75	43	58.30
97	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	12	10.30	75	44	1.70
98	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	12	6.10	75	44	6.20
99	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	12	2.50	75	44	7.60
100	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	11	58.70	75	44	9.80
101	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	11	55.60	75	44	10.30
102	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	11	48.10	75	44	15.10
103	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	11	44.20	75	44	17.50
104	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	11	41.20	75	44	18.60
105	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	11	37.80	75	44	18.90
106	Enercon Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	11	35.00	75	44	16.40

(e)

**A.3. Parties and project participant(s)**

Party involved (host) indicates a host Party)	Private and/or public entity(ies) project participants (as applicable)	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
Government of India (Host)	Enercon (India) Ltd	No
Government of Japan	Japan Carbon Finance Ltd.	No

A.4. Reference of applied methodology

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- ‘Consolidated baseline methodology for grid-connected electricity generation from renewable sources’, **ACM0002, Version 06** and
- ‘Consolidated monitoring methodology for zero-emissions grid-connected electricity generation from renewable sources’, **ACM 0002, Version 06**

A.5. Crediting period of project activity

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Crediting period of the project activity is from 1st July 2010 to 30th June 2020 (Fixed).

SECTION B. Implementation of project activity**B.1. Description of implemented registered project activity**

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The Project involves 52 wind energy converters (WECs) of Enercon make 600 kW E-40 and 53 WECs of Enercon make 800 kW E-48 totalling 105 WECs connected with internal electrical lines connecting the Project with local evacuation facility. The WECs generates 3-phase power at 400V, which is stepped up to 33 KV. The Project can operate in the frequency range of 47.5–51.5 Hz and in the voltage range of 400 V ± 12.5%. The other salient features of the state -of-art-technology are:

- Gearless Construction - Rotor & Generator Mounted on same shaft eliminating the Gearbox.
- Variable speed function – has the speed range of 18 to 33 RPM thereby ensuring optimum efficiency at all times.
- Variable Pitch functions ensuring maximum energy capture
- Near Unity Power Factor at all times
- Minimum draw (less than 1% of kWh generated) of Reactive Power from the grid
- No voltage peaks at any time
- Operating range of the WEC with voltage fluctuation of -20 to +20%
- Less Wear & Tear since the system eliminates mechanical brake, which are not needed due to low speed generator which runs at maximum speed of 33 rpm and uses Air Brakes
- Three Independent Braking Systems
- Generator achieving rated output at only 33 rpm
- Incorporates lightning protection system, which includes blades
- Starts Generation of power at wind speed of 3 m/s

The commissioning date for all the WECs included in the project activity is given in the table below.

Table-2:



S. No.	Name of Customer	Capacity (MW)	Site	Commissioning date
1	Neharaj Energy	0.8	GIM-II	29-Sep-05
2	Vivek Trading Company	0.8	GIM-II	30-Sep-05
3	Jubilee Textiles	0.8	GIM-II	29-Sep-05
4	Prasad Technology Park	1.6	GIM-II	31-Mar-06
5	SrinivasaCystine Ltd	1.6	GIM-II	29-Sep-05
6	Avanti Feeds Ltd	3.2	GIM-II	29-Sep-05
7	Siddaganga Oil Extractions Ltd.	1.6	GIM-II	04-May-06
8	Unnathi Projects Ltd	1.8	VanivilasSagar	30-Mar-05
9	Unnathi Projects Ltd	0.6	VanivilasSagar	23-Mar-05
10	B.V.Finance and Leasing	1.6	GIM-II	30-Sep-05
11	Shilpa Medicare Ltd	1.2	VanivilasSagar	30-Mar-05
12	Cooper Foundry	2.4	VanivilasSagar	30-Sep-04 & 14-Oct-04
13	I. G. E. (India)	0.6	VanivilasSagar	30-Mar-05
14	International Conveyors Ltd	0.6	VanivilasSagar	30-Mar-05
15	Jitendra D. Majetha	0.6	VanivilasSagar	23-Mar-05
16	Patel Shanti Steels P. Ltd.	0.6	VanivilasSagar	24-Sep-04
17	Patel Shanti Steels P. Ltd.	0.6	VanivilasSagar	23-Mar-05
18	Swaraj PVC Pipes P. Ltd.	0.6	VanivilasSagar	30-Mar-05
19	Amrit Bottlers	0.8	GIM-II	30-Sep-05
20	Amrit Bottlers	1.2	VanivilasSagar	30-Mar-05
21	Brindavan Agro	1.2	VanivilasSagar	23-Mar-05
22	Brindavan Agro	3.2	GIM-II	29-Sep-05
23	Rohit Surfactants Pvt Ltd	6	VanivilasSagar	30-Sep-04 & 30-Nov-04
24	Unnathi Projects Ltd	0.8	GIM-II	31-Mar-06



25	Primetex Apparels India	0.6	VanivilasSagar	30-Sep-04
26	MK Agrotech Private Ltd	1.2	VanivilasSagar	30-Mar-05
27	Laxmi Organics	1.2	VanivilasSagar	30-Sep-04& 21-Oct-04
28	S.E.Investment	2.4	VanivilasSagar	23-Mar-05
29	Dinesh Pouches	0.8	EP-II	29-Mar-06
30	UshDev International	1.6	EP-II	29-Mar-06
31	Mumbai Stock Brokers Pvt. Ltd.	0.8	GIM-II	31-Mar-06
32	D. R. Container Terminal	1.6	GIM-II	31-Mar-06
33	Indian Power Corporation Ltd	2.4	GIM-II	15-Feb-06
34	Indian Power Corporation Ltd	4.8	GIM-II	15-Feb-06
35	Indian Power Corporation Ltd	3.2	GIM-II	31-Mar-06
36	Enercon Wind Farms (Karnataka) Ltd	3.2	Gadag	26-Mar-05
37	Enercon Wind Farms (Krishna) Ltd	15	Gadag	15-Mar-05

B.2. Post registration changes**B.2.1. Temporary deviations from registered monitoring plan or applied methodology**

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The deviation has been applied by the PP and was approved by UNFCCC on 21st March 2012
This deviation was applicable for first monitoring period only.

B.2.2. Corrections

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Not Applicable

B.2.3. Permanent changes from registered monitoring plan or applied methodology

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The revision in monitoring was applied and same was approved by UNFCCC on 16th February 2012.

B.2.4. Changes to project design of registered project activity

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Not Applicable

B.2.5. Changes to start date of crediting period

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Not Applicable

B.2.6. Types of changes specific to afforestation or reforestation project activity

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Not Applicable

SECTION C. Description of monitoring system

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Approved monitoring methodology ACM0002 / Version 06 Sectoral Scope: 1, “Consolidated monitoring methodology for zero-emissions grid-connected electricity generation from renewable sources”, by CDM - Meth Panel is proposed to be used to monitor the emission reductions.

This approved monitoring methodology requires monitoring of the following:

- Electricity generation from the project activity; and
- Operating margin emission factor and build margin emission factor of the grid, where *ex post* determination of grid emission factor has been chosen

Since the baseline methodology is based on *ex ante* determination of the baseline emission factor, the monitoring of operating margin emission factor and build margin emission factor is not required.

There is dedicated main and check meters for each of the sub projects included in the project activity at 33kV metering point. The feeders of 33 kV metering point are further connected to step up transformer at substation and subsequently to bulk meter at high voltage side of receiving substation. The bulk meters are connected to machines of the project activity and the machines commissioned by the other project developers.

The subprojects included in the project activity are connected to respective Enercon substations as shown in Appendix-1, where the bulk meters are located:

Therefore in order to determine the net electricity supplied to the grid by the project at high voltage side of receiving substation, the state utility applies the transmission loss to the meter reading recorded at the 33 KV metering point. The transmission loss calculated by the state utility is endorsed / confirmed jointly by the representatives of EIL and the state utility.

The procedure for calculation of transmission loss as given in the PPA is set-out below:

$$Z = ((X1+X2+X3.....+Xn)-Y)*100 / (X1+X2+X3.....+Xn)$$

Z = Percentage transmission loss for export incurred in transmission line between the meters located at 33 kV metering point (including the machines of the project activity and other project developers) and the meters located at high voltage side (bulk meter: main and check) of receiving sub-station.

Summation of meter readings at 33 kV metering points for all the project developers connected to receiving substation (including the machines of the project activity and other project developers)
= (X1+X2+X3.....+Xn)

Xi (where, i can vary from 1 to n)= Energy Export Reading (Xi) noted at energy meter installed at 33kV metering point and represents the meters connected to project activity and other project developers. X1, X2, X3,...Xn are the meters that are installed at 33kV metering point (including the machines of the project activity and other project developers) and further connected to the receiving substation by internally connected lines.

Y = Energy Export Reading at bulk meter installed at high voltage side of transformer of the receiving sub-station



The Export Reading is adjusted for transmission loss that is determined by the state utility as above is applied directly to the JMR (Form B) for each sub project included in the project activity taken at 33 kV metering point.

Transmission Loss in Export (**TE**) = Transmission Loss% (Z) * Energy Export at 33kV metering point (EG_{Export})

This calculated value of transmission loss (expressed in MWh) is shown in the JMR and can be verified.

In case of Energy Import, the state utility conservatively applies adjustment of 15% to the import values noted at 33 kV metering point.

Therefore, Energy Supplied to Grid for each of the sub projects is calculated after adjustment of actually calculated transmission loss to the electricity exported from which 115% import is deducted. Thus,

EG_y (Sub project) = EG_{export} – 115%*EG_{import} – Transmission Loss (TE)

This is shown as the energy to be billed in the JMR recorded in FORM B.

The JMR in FORM B for each of the sub project noted at 33 KV metering location contains the following data:-

1. Present meter readings of main and check meters for export and import
2. Previous meter readings of the main and check meters for export and import
3. Multiplying constant
4. Energy exported / energy imported (difference of 1 and 2 multiplied by 3)
5. Transmission losses (calculated as above)
6. Energy to be billed (calculated as energy exported–transmission loss-115% import) (reckoned as net energy generated and used for calculation of CER)

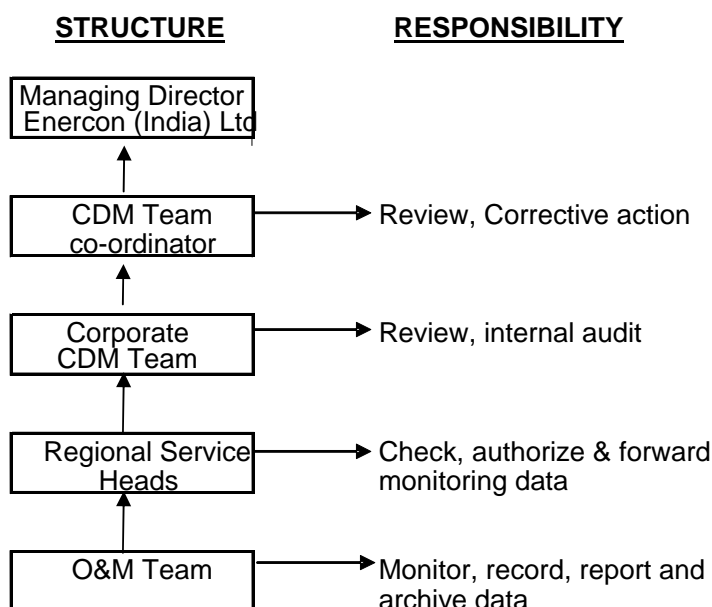
JMR is signed by the representatives of EIL and the state utility. The net electricity supplied to the grid can be cross checked from the invoices for each of the sub project raised on the state utility for supply of net electricity supplied to the grid.

In addition to the JMR (Form B) at 33kV metering location for each of the sub project included in the project activity as per details shown above, the following documents will also be provided to the DoE for verification:

1. JMR (Form B) at high voltage side of receiving sub-station(bulk meters: main and check).
2. Transmission loss calculation endorsed / confirmed jointly by the representatives of Enercon and the state utility.

Net electricity Supplied to Grid for the project activity is summation of Net electricity Supplied to Grid for each of the sub project included in the project activity.

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

**Training and maintenance:**

Training on the machine is an essential pre-requisite to ensure necessary safety of man and machine. Further, in order to maximize the output from the Wind Energy Converters (WECs), it is extremely essential that the engineers and technicians understand the machines and keep them in good health. In order to ensure that Enercon's service staffs is deft at handling technical snags on top of the turbine, the necessity of ensuring that they are capable of climbing the tower with absolute ease and comfort has been established. The Enercon Training Academy provides need-based training to meet the training requirements of Enercon projects. The training is contemporary, which results in imparting focused knowledge leading to value addition to the attitude and skills of all trainees. This ultimately leads to creativity in problem solving. The site personnel of EIL are also provided training about monitoring aspects of wind turbine performance; they are fully qualified to carry out all site duties such as preventive maintenance, operation controls and all monitoring processes.

- **Metering:** Electricity supplied to the grid is metered jointly by state utility and Enercon through dedicated main and check meters at 33 kV metering point for each of the sub project included in the project activity.

In addition to this there are main and check meters (Bulk meters) at high voltage side of receiving sub-station covering sub projects of the project activity and machines of other project developers. There are four receiving stations to which the sub projects included in the project activity are connected. The sub projects and the respective sub stations to which they are connected are presented in Appendix-1.

The schematic diagram shows location of meters for the project activity is attached as Appendix 1.

- **Metering Equipment:** Metering system for the project activity consists of main and check meters at 33kV metering point for each of the sub project included in the project activity and set(s) of main and check meters at high voltage side of receiving substation. All the meters are **two-way trivector meters capable of recording import and export of electricity**. The meters installed are capable of recording



and storing half hourly readings of the electrical parameters for a minimum period of 35 days with digital output.

- **Meter Readings:** The electricity export and import to the grid is recorded by taking a Joint Meter Reading (JMR) in the presence of Officials from state Utility and Enercon India Limited at 33kV metering point for each of the sub project included in the project activity. The Joint meter reading contains the value of energy imported, exported, transmission loss and the net electricity exported to the grid during the recording period. This Joint meter reading is certified by the Executive engineer of the state utility and by Enercon Officials. These certified readings are then used by the state utility to prepare the tariff invoices. Thus net electricity supplied to the grid for each of the sub project included in the project activity can be crosschecked with the value mentioned in the invoices raised on the state utility by each of the sub project included in the project activity
- **Inspection of Energy Meters:** All main and check energy meters and all associated instruments, transformers installed at the Project are of 0.2s accuracy class. Each meter is jointly inspected and sealed on behalf of the Parties and is not to be interfered with by either Party except in the presence of the other Party or its accredited representatives.
- **Meter Test Checking:** All main and check meters are tested (and calibrated if found necessary) for accuracy on annual basis with reference to a portable standard meter. The portable standard meter is owned by KPTCL. The main and check meters shall be deemed to be working satisfactorily if the errors are within specifications for meters of 0.2s accuracy class. The consumption registered by the main meters alone will hold good for the purpose of metering electricity supplied to the grid as long as the error in the main meters is within the permissible limits. All the meters will be tested / calibrated for accuracy annually.

If during the meter test checking,

- The main meter is found to be within the permissible limit of error and the corresponding check meter is beyond the permissible limits, then the meter reading will be as per the main meter as usual. The check meter shall, however, be calibrated immediately.
- The main meter is found to be beyond permissible limits of error, but the corresponding check meter is found to be within permissible of error, then the meter reading for the month up to the date and time of such test shall be as per the check meter. There will be a revision in the meter reading for the period from the previous calibration test up to the current test based on the readings of the check meter. The main meter shall be calibrated immediately and meter reading for the period thereafter till the next monthly meter reading shall be as per the calibrated main meter.
- Both the main meters and the corresponding check meters are found to be beyond the permissible limits of error, main and check meters shall be immediately calibrated and the correction applied to the reading registered by the main meter to arrive the correct reading of energy supplied for metering electricity supplied to the grid for the period from the last month's meter reading up to the current test. Meter reading for the period thereafter till the next monthly reading shall be as per the calibrated main meter.

Metering system details:

The metering arrangement for the project activity is given in the diagram in **Appendix 1**.

The details of meters installed at the site for measuring export and import by project activity are provided below:

Table-3:



S. No.	Name of Customer	Capacity (MW)	Site	R.R.NO.	Meter Make, Accuracy Class	Main Meter No.	Check Meter No.
1	Neharaj Energy	0.8	GIM-II	ELP-2	L & T, 0.2,	05342751	05342752
2	Vivek Trading Company	0.8	GIM-II	ELP-11	L & T, 0.2,	05342857	05342858
3	Jubilee Textiles	0.8	GIM-II	ELP-3	L & T, 0.2,	05342756	05342758
4	Prasad Technology Park	1.6	GIM-II	ELP-18	L & T, 0.2,	05271047	05271049
5	SrinivasaCystine Ltd	1.6	GIM-II	ELP-5	L & T, 0.2,	05341445	05341446
6	Avanti Feeds Ltd	3.2	GIM-II	ELP-4	L & T, 0.2,	05341447	05341448
7	Siddaganga Oil Extractions Ltd.	1.6	GIM-II	ELP-32	L & T, 0.2,	05436133	05436139
8	Unnathi Projects Ltd	1.8	Vanivila sSagar	VVS 36	L & T, 0.2,	05271060	05271059
9	Unnathi Projects Ltd	0.6	Vanivila sSagar	VVS 30	L & T, 0.2,	05271065	05271066
10	B.V.Finance and Leasing	1.6	GIM-II	ELP-6	L & T, 0.2,	05341441	05341450
11	Shilpa Medicare Ltd	1.2	Vanivila sSagar	VVS 41	L & T, 0.2,	05271043	05293305
12	Cooper Foundry	2.4	Vanivila sSagar	VVS 26	L & T, 0.2,	04219540	04219539
13	I. G. E. (India)	0.6	Vanivila sSagar	VVS 40	L & T, 0.2,	05271055	05271056
14	International Conveyors Ltd	0.6	Vanivila sSagar	VVS 38	L & T, 0.2,	05271044	05271048
15	Jitendra D. Majetha	0.6	Vanivila sSagar	VVS 31	L & T, 0.2,	05271053	05271054
16	Patel Shanti Steels P. Ltd.	0.6	Vanivila sSagar	VVS 21	L & T, 0.2,	04187660	04187668
17	Patel Shanti Steels P. Ltd.	0.6	Vanivila sSagar	VVS 32	L & T, 0.2,	05271050	05271051
18	Swaraj PVC Pipes P. Ltd.	0.6	Vanivila sSagar	VVS 39	L & T, 0.2,	05271045	07022947
19	Amrit Bottlers	0.8	GIM-II	ELP 13	L & T, 0.2,	05342863	05342864
20	Amrit Bottlers	1.2	Vanivila sSagar	VVS 42	L & T, 0.2,	05293302	05293303
21	Brindavan Agro	1.2	Vanivila sSagar	VVS 33	L & T, 0.2,	05271052	05271061
22	Brindavan	3.2	GIM-II	ELP-7	L & T,	05342859	05342860



	Agro				0.2,		
23	Rohit Surfactants Pvt Ltd	6	Vanivila sSagar	VVS 27	L & T, 0.2,	04219529	04219545
24	Unnathi Projects Ltd	0.8	GIM-II	ELP-19	L & T, 0.2,	05390227	05390228
25	Primetex Apparels India	0.6	Vanivila sSagar	VVS 24	L & T, 0.2,	04186267	04219534
26	MK Agrotech Private Ltd	1.2	Vanivila sSagar	VVS 43	L & T, 0.2,	05293310	05293312
27	Laxmi Organics	1.2	Vanivila sSagar	VVS 25	L & T, 0.2,	04219547	04219580
28	S.E.Investment	2.4	Vanivila sSagar	VVS 35	L & T, 0.2,	06760776	05271068
29	Dinesh Pouches	0.8	EP-II	EP2-26	L & T, 0.2,	05463836	05463837
30	UshDev International	1.6	EP-II	EP2-24	L & T, 0.2,	05463965	05463972
31	Mumbai Stock Brokers Pvt. Ltd.	0.8	GIM-II	ELP-21	L & T, 0.2,	05389968	05389969
32	D. R. Container Terminal	1.6	GIM-II	ELP-22	L & T, 0.2,	05389976	05389980
33	Indian Power Corporation Ltd	2.4	GIM-II	ELP-15	L & T, 0.2,	05342757	05342759
34	Indian Power Corporation Ltd	4.8	GIM-II	ELP-16	L & T, 0.2,	05436134	05436138
35	Indian Power Corporation Ltd	3.2	GIM-II	ELP-26	L & T, 0.2,	05436125	05436128
36	Enercon Wind Farms (Karnataka) Ltd	3.2	Gadag	HBL/TL&SS/WF/EWKLH/07	L & T, 0.2,	06607750	05271064
37	Enercon Wind Farms (Krishna) Ltd	15	Gadag	HBL/TL&SS/WF/EWKLH/6	L & T, 0.2,	04259886	04259887

The details of meters installed at receiving station for the purpose of measuring and allotting transmission losses are provided below:

Table-4:

S. No	Name of Substation	Meter RR. No	Main meter	Check meter
1	EP-II Sub-station at NandanaHosuru	EP2-01	04179674	02048064
		EP2-02	02048052	02048043



2	GIM-II Sub-station at Gownalli	ELP-17	05271046	05389972
		ELP-41	05389983	05389985
3	Gadag Sub-station at Hirevaddatti	HBL/TL&SS/WF/S PML/5)	04249351	04249324
4	VVS Sub-station at G N Kere	VVS-01	04179554	04179661
		VVS-02	04179543	04179553

Quality Control and Quality Assurance:

The readings of main meter and check meter have been checked monthly to assess the accuracy of meters. The difference between readings of main meter and check meter have been checked so that percentage difference in these two readings does not exceed the combined accuracy range of meters.

The main meter and check meter both have accuracy class of 0.2s.

Thus, for any given reading, the difference between the main and check meter cannot exceed 0.4%. Therefore, if the main and check meter readings recorded for any month differs by up to 0.4%, then it is considered to be within the accuracy level; if the difference exceeds 0.4% then a suitable correction factor which is equal to the difference between the calculated accuracy level and the stated accuracy level is applied on the more conservative reading. For the months, when the difference between readings of main and check meter has exceeded the combined accuracy limit, a correction factor equal to the % difference in excess of 0.2s has been applied. In order to ensure conservativeness, correction factor has been applied to the lower value between main and check meter values. This final reading after applying the correction factor on the lower value has been used for CER calculation, which is most conservative.

The details of calibration of meters installed at the site for measuring export and import by project activity are provided below:

Table-5:

S. No.	Name of Customer	R.R.NO.	Main Meter No.	Check Meter No.	Date of Calibration under Monitoring period
1	Neharaj Energy	ELP-2	05342751	05342752	14.07.2011
2	Vivek Trading Company	ELP-11	05342857	05342858	15.07.2011
3	Jubilee Textiles	ELP-3	05342756	05342758	14.07.2011
4	Prasad Technology Park	ELP-18	05271047	05271049	16.07.2011
5	SrinivasaCystine Ltd	ELP-5	05341445	05341446	14.07.2011
6	Avanti Feeds Ltd	ELP-4	05341447	05341448	14.07.2011
7	Siddaganga Oil Extractions Ltd.	ELP-32	05436133	05436139	30.07.2011
8	Unnathi Projects Ltd	VVS 36	05271060	05271059	08.03.2011 17.12.2011
9	Unnathi Projects Ltd	VVS 30	05271065	05271066	11.03.2011 17.12.2011
10	B.V.Finance and Leasing	ELP-6	05341441	05341450	14.07.2011
11	Shilpa Medicare Ltd	VVS 41	05271043	05293305	11.03.2011 17.12.2011
12	Cooper Foundry	VVS 26	04219540	04219539	11.03.2011 19.12.2011
13	I. G. E. (India)	VVS 40	05271055	05271056	08.03.2011 17.12.2011



14	International Conveyors Ltd	VVS 38	05271044	05271048	08.03.2011 17.12.2011
15	Jitendra D. Majetha	VVS 31	05271053	05271054	11.03.2011 17.12.2011
16	Patel Shanti Steels P. Ltd.	VVS 21	04187660	04187668	10.03.2011 19.12.2011
17	Patel Shanti Steels P. Ltd.	VVS 32	05271050	05271051	11.03.2011 19.12.2011
18	Swaraj PVC Pipes P. Ltd.	VVS 39	05271045	07022947	08.03.2011 17.12.2011
19	Amrit Bottlers	ELP 13	05342863	05342864	15.07.2011
20	Amrit Bottlers	VVS 42	05293302	05293303	08.03.2011 17.12.2011
21	Brindavan Agro	VVS 33	05271052	05271061	11.03.2011 17.12.2011
22	Brindavan Agro	ELP-7	05342859	05342860	14.07.2011
23	Rohit Surfactants Pvt Ltd	VVS 27	04219529	04219545	08.03.2011 19.12.2011
24	Unnathi Projects Ltd	ELP-19	05390227	05390228	19.07.2011
25	Primetex Apparels India	VVS 24	04186267	04219534	11.03.2011 29.09.2011
26	MK Agrotech Private Ltd	VVS 43	05293310	05293312	09.03.2011 17.12.2011
27	Laxmi Organics	VVS 25	04219547	04219580	11.03.2011 19.12.2011
28	S.E.Investment	VVS 35	06607114	06607013	18.08.2010 29.09.2011
29	Dinesh Pouches	EP2-26	05463836	05463837	20.12.2010 29.09.2011
30	UshDev International	EP2-24	05463965	05463972	20.12.2010 24.09.2011
31	Mumbai Stock Brokers Pvt. Ltd.	ELP-21	05389968	05389969	29.07.2011
32	D. R. Container Terminal	ELP-22	05389976	05389980	30.07.2011
33	Indian Power Corporation Ltd	ELP-15	05342757	05342759	16.07.2011
34	Indian Power Corporation Ltd	ELP-16	05436134	05436138	29.07.2011
35	Indian Power Corporation Ltd	ELP-26	05436125	05436128	30.07.2011
36	Enercon Wind Farms (Karnataka) Ltd	HBL/TL&SS/ WF/EWKLH/07	06607750	05271064	17.06.2011
37	Enercon Wind Farms (Krishna) Ltd	HBL/TL&SS/ WF/EWKLH/6	04259886	04259887	17.06.2011

The details of calibration for the meters at receiving stations are provided below:
Table-6:

S. No	Name of Substation	Main meter	Check meter	Calibration Test	
				2011	2012
1	EP-II Sub-station at	04179674	02048064	24.03.2011	06.03.2012



	NandanaHosuru	02048052	02048043		
2	GIM-II Sub-station at Gownalli	05271046 05389983	05389972 05389985	19.03.2011 13.09.2011	NA
3	Gadag Sub-station at Hirevaddatti	04249351	04249324	12.07.2011	NA
4	VVS Sub-station at G N Kere	04179554 04179543	04179661 04179553	26.03.2011 23.09.2011	NA

SECTION D. Data and parameters**D.1. Data and parameters fixed ex ante or at renewal of crediting period***(Copy this table for each piece of data and parameter.)*

Data/Parameter	$EF_{OM,y}$		
Unit	tCO ₂ e/MWh		
Description	Operating Margin Emission Factor of Southern Regional Electricity Grid		
Source of data	“CO ₂ Baseline Database for Indian Power Sector” published by the Central Electricity Authority, Ministry of Power, Government of India. The “CO ₂ Baseline Database for Indian Power Sector” is available at www.cea.nic.in		
Value(s) applied	2002 – 03	0.99702	
	2003 – 04	1.00937	
	2004 – 05	1.00376	
	Average	1.00338	
Purpose of data	To calculate Baseline Emissions Factor		
Additional comment	None		

Data/Parameter	$EF_{BM,y}$		
Unit	tCO ₂ e/MWh		
Description	Build Margin Emission Factor of Southern Regional Electricity Grid		
Source of data	“CO ₂ Baseline Database for Indian Power Sector” published by the Central Electricity Authority, Ministry of Power, Government of India. The “CO ₂ Baseline Database for Indian Power Sector” is available at www.cea.nic.in		
Value(s) applied	0.71799		
Purpose of data	To calculate Baseline Emissions Factor		
Additional comment	None		



Data/Parameter	$EF_{CM,y}$
Unit	tCO ₂ e/MWh
Description	Combined Margin Emission Factor of Southern Regional Electricity Grid
Source of data	Calculated
Value(s) applied	0.93204
Purpose of data	To calculate Baseline Emissions
Additional comment	None

D.2. Data and parameters monitored

(Copy this table for each piece of data and parameter.)

Data/Parameter	EGexport
Unit	MWh (Mega-Watt hour)
Description	Electricity Export recorded at the designated meter. All the subprojects included in the project activity have dedicated main and check meters at 33 kV metering point.
Measured/Calculated /Default	Measured
Source of data	Electricity export to the grid as per joint meter reading (FormB) for each of the sub project taken at 33kV metering point. The main meter reading is considered for all calculations. The purpose of the check meter is to serve as a check on the accuracy of measurement and its reading is used when main meter is not working properly.
Value(s) of monitored parameter	106042.551
Monitoring equipment	Monitoring: Electricity export to the grid will be recorded by the meters (main and check meters) at 33kV point. Refer section C for an illustration of the provisions for measurement methods.
Measuring/Reading/ Recording frequency	Frequency of recording data: Monthly Recording: The values of electricity exports to the grid are sourced from JMR for the sub projects at 33 kV metering point.
Calculation method (if applicable)	NA
QA/QC procedures	QA/QC procedures are implemented by state utility pursuant to the provisions of the power purchase agreement. Refer section C of QA/QC procedures.
Purpose of data	To calculate emission reduction.
Additional comment	The data will be archived for crediting period + 2 years.



Data/Parameter	EGimport
Unit	MWh (Mega-Watt hour)
Description	Electricity Import recorded at the meters (main and check meters). All the subprojects included in the project activity have dedicated main and check meters at 33 kV metering point.
Measured/Calculated /Default	Measured
Source of data	Electricity import from the grid as per joint meter reading for each of the sub project taken at 33kV metering point.
Value(s) of monitored parameter	138.708
Monitoring equipment	Monitoring: Electricity export to the grid will be recorded by the meters (main and check meters) at 33kV point. Refer section C for an illustration of the provisions for measurement methods.
Measuring/Reading/ Recording frequency	Frequency of recording data: Monthly Recording: The values of electricity exports to the grid are sourced from JMR for the sub projects at 33 kV metering point.
Calculation method (if applicable)	NA
QA/QC procedures	QA/QC procedures are implemented by state utility pursuant to the provisions of the power purchase agreement. Refer section C of QA/QC procedures.
Purpose of data	To calculate emission reduction.
Additional comment	The data will be archived for crediting period + 2 years.



Data/Parameter	T_E
Unit	MWh (Mega-Watt hour)
Description	Transmission loss for export between the metering location at 33 kV metering point and the high voltage side of the substation to which the subproject is connected.
Measured/Calculated /Default	Measured
Source of data	Transmission Loss for export will be sourced from the joint meter reading (Form B) taken at 33kV metering point for all the sub projects included in the project activity.
Value(s) of monitored parameter	1498.556
Monitoring equipment	<p>Monitoring: Transmission loss between metering location at 33 kV and the metering location at receiving substation is applied to the meter reading taken at meters connected at 33 KV point for the project activity.</p> <p>The Substation is connected to the machines of the project activity and the machines commissioned by the other project owners. Therefore transmission loss is applied by the state utility as reflected in the JMR (Form B) taken at 33kV point for all the sub projects included in the project activity. The JMR is signed by the representatives of Enercon and the state utility. Refer section C for an illustration of the provisions for measurement methods.</p>
Measuring/Reading/ Recording frequency	<p>Frequency of recording data: Monthly</p> <p>Recording: The value of transmission loss is sourced from JMR for all sub projects at 33 kV metering point.</p>
Calculation method (if applicable)	NA
QA/QC procedures	QA/QC procedures are implemented by state utility pursuant to the provisions of the power purchase agreement. Refer section C of QA/QC procedures.
Purpose of data	To calculate emission reduction.
Additional comment	The data will be archived for crediting period + 2 years.

D.3. Implementation of sampling plan

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No sampling plan is followed by PP.

SECTION E. Calculation of emission reductions or GHG removals by sinks

E.1. Calculation of baseline emissions or baseline net GHG removals by sinks

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“The baseline is the kWh produced by the renewable generating unit multiplied by an emission coefficient (measured in kg CO₂e/kWh) calculated in a transparent and conservative manner as the weighted average emissions (in kg CO₂e/kWh) as described in registered PDD.

$$BE_y = EG_y * EF_y$$



Where,

BE is baseline emissions in year y, tCO₂e

EG_y is the net electricity supplied to the grid in year y and is applied directly from JMR certified by state utility. This value can also be cross checked from the invoice.

EF_y is the CO₂ emission factor of the grid (0.93204 tCO₂e/MWh fixed ex-ante).

Baseline Emission for the period (01/08/2011 to 31/05/2012)

= 104384480 (Kwh) * 0.93204 (tCO₂/MWh) /10³

= **97101 tCO₂**

Name of Customer	Site	EG _y	Baseline Emissions (BE _y)
		(KWh)	(tCO ₂)
Neharaj Energy	GIM-II	1115608	1036
Vivek Trading Company	GIM-II	1021293	946
Jubilee Textiles	GIM-II	1203842	1117
Prasad Technology Park	GIM-II	2204867	2050
Srinivasa Cystine Ltd	GIM-II	2087307	1939
Avanti Feeds Ltd	GIM-II	4049687	3770
Siddaganga Oil Extractions Ltd.	GIM-II	2452335	2281
Unnathi Projects Ltd	GIM-II	915949	850
B.V.Finance and Leasing	GIM-II	2244388	2085
Shilpa Medicare Ltd	Vanivilas Sagar	1620433	1506
Cooper Foundry	Vanivilas Sagar	3518143	3275
I. G. E. (India)	Vanivilas Sagar	881852	818
International Conveyors Ltd	Vanivilas Sagar	832872	770
Jitendra D. Majetha	Vanivilas Sagar	984125	912
Patel Shanti Steels P. Ltd.	Vanivilas Sagar	1801188	1669
Swaraj PVC Pipes P. Ltd.	Vanivilas Sagar	879810	814
Amrit Bottlers	GIM-II	1140144	1057
Amrit Bottlers	Vanivilas Sagar	1379279	1281
Brindavan Agro	GIM-II	3257262	3032
Brindavan Agro	vanivilas Sagar	1905743	1771
Rohit Surfactants Pvt Ltd	Vanivilas Sagar	9137110	8511
Unnathi Projects Ltd	Vanivilas Sagar	3122491	2900
Primetex Apparels India	Vanivilas Sagar	953148	882
MK Agrotech Private Ltd	Vanivilas Sagar	1563528	1452
Laxmi Organics	Vanivilas Sagar	1826090	1696
S.E.Investment	Vanivilas Sagar	3426357	3189
Dinesh Pouches	EP-II	1057364	980
Ush Dev International	EP-II	2191501	2038
Mumbai Stock Brokers Pvt. Ltd.	Gim-II	1228067	1139
D. R. Container Terminal	Gim-II	1898845	1764
Indian Power Corporation Ltd	GIM-II	13251785	12335
Enercon Wind Farms (Karnataka) Ltd	Gadag	3805544	3543
Enercon Wind Farms (Krishna) Ltd	Gadag	25426525	23693
Total		104384480	97101

**E.2. Calculation of project emissions or actual net GHG removals by sinks**

>>

The project activity is a renewable energy project which generates electricity using wind power and hence does not result in project emissions.

E.3. Calculation of leakage

>>

No leakage is considered from the project activity as per approved methodology ACM0002, Version 06.

E.4. Summary of calculation of emission reductions or net anthropogenic GHG removals by sinks

Time Period	Baseline emissions or baseline net GHG removals by sinks (tCO ₂ e)	Project emissions or actual net GHG removals by sinks (tCO ₂ e)	Leakage (tCO ₂ e)	Emission reductions or net anthropogenic GHG removals by sinks (tCO ₂ e)
01/08/2011 – 31/05/2012	97101	0	0	97101
Total	97101	0	0	97101

E.5. Comparison of actual emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Item	Values estimated in ex-ante calculation of registered PDD	Actual values achieved during this monitoring period
Emission reductions or GHG removals by sinks (tCO ₂ e)	132703	97101

E.6. Remarks on difference from estimated value in registered PDD

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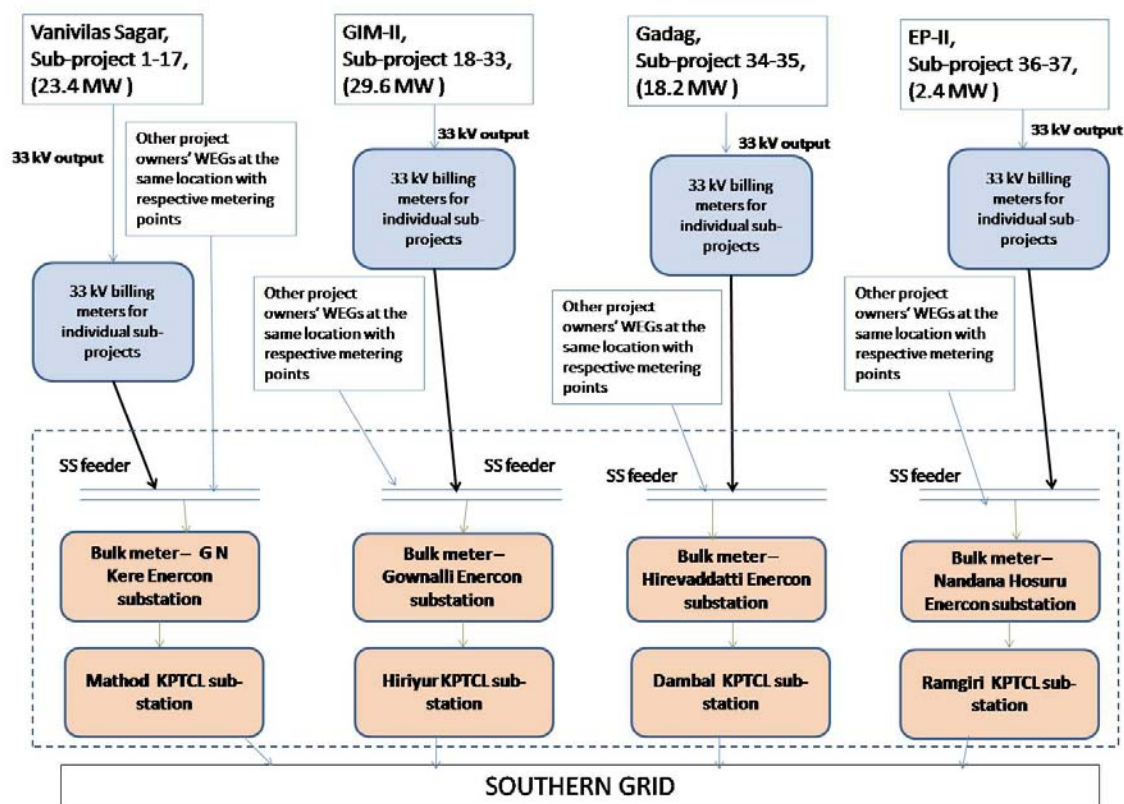
The CER's for the said monitoring period are 26.82 % lower than as estimated in the PDD. This is due to lower PLF than estimated in PDD.

History of the document

Version	Date	Nature of revision
02.0	EB 66 13 March 2012	Revision required to ensure consistency with the "Guidelines for completing the monitoring report form" (EB 66, Annex 20).
01	EB 54, Annex 34 28 May 2010	Initial adoption.
Decision Class: Regulatory Document Type: Form Business Function: Issuance		

Appendix 1

Metering Arrangement for the Project Activity



NOTE: There are 37 installations of 33 kVA billing meters and 4 substation (ss) metering points, details of which are as provided below:

Table-7:

S. No	Name of Customers	Capacity (MW)	R.R. NO.	Site Name	Name of Enercon Substation	Meter Accuracy Class
1	Primetex Apparels India	0.6	VVS-24	VanivilasSagar	VVS Sub-station at G N Kere	0.2S
2	Patel Shanti Steels P. Ltd.	0.6	VVS-21,	VanivilasSagar		0.2S
3	Patel Shanti Steels P. Ltd.	0.6	VVS-32	VanivilasSagar		0.2S
4	Laxmi Organics	1.2	VVS 25	VanivilasSagar		0.2S
5	Rohit Surfactants P.Ltd	6	VVS 27	VanivilasSagar		0.2S



6	Cooper foundry	2.4	VVS-26	VanivilasSagar		0.2S
7	I. G. E. (India)	0.6	VVS-40	VanivilasSagar		0.2S
8	International Conveyors Ltd	0.6	VVS-38	VanivilasSagar		0.2S
9	Jitendra D. Majetha	0.6	VVS-31	VanivilasSagar		0.2S
10	Swaraj PVC Pipes P. Ltd.	0.6	VVS-39	VanivilasSagar		0.2S
11	Shilpa Medicare Ltd.	1.2	VVS-41	VanivilasSagar		0.2S
12	Amrit Bottlers	1.2	VVS-42	VanivilasSagar		0.2S
13	Brindavan Agro	1.2	VVS-33	VanivilasSagar		0.2S
14	MK Agrotech Private Ltd	1.2	VVS-43	VanivilasSagar		0.2S
15	Unnathi Projects Ltd	0.6	VVS-30	VanivilasSagar		0.2S
16	Unnathi Projects Ltd	1.8	VVS-36	VanivilasSagar		0.2S
17	S.E.Investment	2.4	VVS-35	VanivilasSagar		0.2S
18	Jubilee Textiles	0.8	ELP-3	GIM-II	GIM-II substation at Gownalli	0.2S
19	Amrit Bottlers	0.8	ELP-13	GIM-II		0.2S
20	SrinivasaCystine Ltd	1.6	ELP-5	GIM-II		0.2S
21	B.V.Finance and leasing	1.6	ELP-6	GIM-II		0.2S
22	Brindavan Agro	3.2	ELP-7	GIM-II		0.2S
23	Avanti Feeds Ltd	3.2	ELP-4	GIM-II		0.2S
24	Indian power corporation	2.4	ELP-15	GIM-II		0.2S
25	Indian power corporation	4.8	ELP-16	GIM-II		0.2S
26	Indian power corporation	3.2	ELP-26	GIM-II		0.2S
27	Neharaj Energy	0.8	ELP-2	GIM-II		0.2S
28	Vivek Trading Co.	0.8	ELP-11	GIM-II		0.2S
29	Unnathi Project Ltd	0.8	ELP-19	GIM-II		0.2S
30	Mumbai Stock Brokers Pvt. Ltd.	0.8	ELP-21	GIM-II		0.2S



31	Siddaganga Oil Extractions Ltd.	1.6	ELP-32	GIM-II		0.2S
32	Prasad Technology Park	1.6	ELP-18	GIM-II		0.2S
33	D. R. Container Terminal	1.6	ELP-22	GIM-II		0.2S
34	Enercon Wind Farms (Krishna) Ltd	15	HBL/TL&SS / WF/EWKLH /6	Gadag	Gadag substation at Hiredawatti	0.2S
35	Enercon Wind Farms (Karnataka) Ltd	3.2	HBL/TL&SS / WF/EWKLH /07	Gadag		0.2S
36	Dinesh Pouches	0.8	EP2-26	EP-II	EP-II substation at NandanaHosuru	0.2S
37	UshDev International	1.6	EP2-24	EP-II		0.2S
	Total Capacity (MW)	73.60				

The details of meters installed at receiving station for the purpose of measuring and allotting transmission losses are provided below:

Table-8:

S. No	Name of Substation	RR. No	Meter accuracy class
1	EP-II Sub-station at NandanaHosuru	EP2-01	0.2S
		EP2-02	0.2S
2	GIM-II Sub-station at Gownalli	ELP-17	0.2S
		ELP-41	0.2S
3	Gadag Sub-station at Hiredawatti	HBL/TL/&SS/WF/SP ML/5	0.2S
4	VVS Sub-station at G N Kere	VVS-01	0.2S
		VVS-02	0.2S