



Monitoring report form for CDM project activity
(Version 07.0)

MONITORING REPORT

Title of the project activity	Enercon Wind Farms in Karnataka Bundled Project – 73.60 MW	
UNFCCC reference number of the project activity	1286	
Version number of the PDD applicable to this monitoring report	7.0	
Version number of this monitoring report	1.0	
Completion date of this monitoring report	05/10/2020	
Monitoring period number	Seven	
Duration of this monitoring period	01/04/2017 – 31/12/2017 (including both days)	
Monitoring report number for this monitoring period	NA	
Project participants	M/s Wind World (India) Limited Japan Carbon Finance, Ltd. (withdrawn) ACT Financial Solutions B.V. First Climate Markets A.G. Statkraft Markets GmbH WeAct Pty Ltd.	
Host Party	India	
Applied methodologies and standardized baselines	ACM0002 (Consolidated baseline methodology for grid-connected electricity generation from renewable sources)/ Version 06	
Sectoral scopes	Sectoral Scope 1 - Energy industries (renewable/ non-renewable sources).	
Amount of GHG emission reductions or net anthropogenic GHG removals achieved by the project activity in this monitoring period	Amount achieved before 1 January 2013	Amount achieved from 1 January 2013
	0	98,238
Amount of GHG emission reductions or net anthropogenic GHG removals estimated ex ante for this monitoring period in the PDD	119,978	

SECTION A. Description of project activity

A.1. 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 Wind World Wind Farm (Krishna) Ltd 15 MW, Wind World 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 64 wind energy converters (WECs) of Wind World make E-40 (600 kW) and 44WECs of Wind World make E-48 (800 kW) totalling to 108 WECs. Wind World (India) Ltd (WWIL) 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 24/09/2004 and 04/05/2006. The expected operational lifetime of the project is for 20 years. The project activity was registered as CDM project on 01/07/2010.

(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 (01/04/2017 – 31/12/2017) are 98,238 tCO₂e.

The details of issuance of CERs for the previous monitoring periods are as follows:

Monitoring Period No.	Monitoring Period	CER Issued
First Issuance	01 Jul 2010 - 31 Jul 2011 (Inclusive of both days)	159224
Second issuance	01 Aug 2011 - 31 May 2012 (Inclusive of both days)	98098
Third issuance	01 Jun 2012 - 30 Sep 2012 (Inclusive of both days)	100475
Fourth Issuance	01 Oct 2012 - 31 Mar 2014 (Inclusive of both days)	189,659
Fifth Issuance	01 Apr 2014 - 30 Jun 2015 (Inclusive of both days)	167869
Sixth Issuance	01 Jul 2015 - 31 Mar 2017 (Inclusive of both days)	205122

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 :

Sl. No	Name of Customer	Individual Capacity (MW)	Site	R.R.NO.	Location No	Latitude			Longitude		
						Deg	Minutes	Second	Deg	Minutes	Second
1	MK Agrotech Private Ltd	0.6	Vanivilas Sagar	VVS 43	10	76	29	27.00	13	52	15.50
2	MK Agrotech Private Ltd	0.6	Vanivilas Sagar	VVS 43	11	76	29	28.31	13	52	11.91
3	International Conveyors Ltd	0.6	Vanivilas Sagar	VVS 38	13	76	29	23.36	13	51	57.17
4	Swaraj PVC Pipes P. Ltd.	0.6	Vanivilas Sagar	VVS 39	14	76	29	24.00	13	51	53.74
5	I. G. E. (India)	0.6	Vanivilas Sagar	VVS 40	15	76	29	25.01	13	51	50.19
6	Shilpa Medicare Ltd	0.6	Vanivilas Sagar	VVS 41	18	76	29	27.80	13	51	39.01
7	Shilpa Medicare Ltd	0.6	Vanivilas Sagar	VVS 41	19	76	29	32.10	13	51	28.90
8	Unnathi Projects Ltd	0.6	Vanivilas Sagar	VVS 36	21	76	29	34.10	13	51	23.26
9	Unnathi Projects Ltd	0.6	Vanivilas Sagar	VVS 36	22	76	29	33.85	13	51	20.30
10	Unnathi Projects Ltd	0.6	Vanivilas Sagar	VVS 36	23	76	29	36.29	13	51	17.65
11	Amrit Bottlers	0.6	Vanivilas Sagar	VVS 42	24	76	29	36.94	13	51	14.58
12	Amrit Bottlers	0.6	Vanivilas Sagar	VVS 42	25	76	29	37.45	13	51	11.03
13	S.E.Investment	0.6	Vanivilas Sagar	VVS 35	28	76	29	40.08	13	51	1.16
14	Rohit Surfactants Pvt Ltd	0.6	Vanivilas Sagar	VVS 27	29	76	29	43.16	13	50	57.95
15	Rohit Surfactants Pvt Ltd	0.6	Vanivilas Sagar	VVS 27	30	76	29	44.41	13	50	54.72
16	Rohit Surfactants Pvt Ltd	0.6	Vanivilas Sagar	VVS 27	31	76	29	45.12	13	50	51.88
17	Rohit Surfactants Pvt Ltd	0.6	Vanivilas Sagar	VVS 27	32	76	29	46.27	13	50	49.47
18	S.E.Investment	0.6	Vanivilas Sagar	VVS 35	33	76	29	48.12	13	50	41.97
19	S.E.Investment	0.6	Vanivilas Sagar	VVS 35	34	76	29	49.84	13	50	39.13
20	Rohit Surfactants Pvt Ltd	0.6	Vanivilas Sagar	VVS 27	35	76	29	55.45	13	50	37.67
21	S.E.Investment	0.6	Vanivilas Sagar	VVS 35	37	76	29	53.97	13	50	29.25
22	Rohit Surfactants Pvt Ltd	0.6	Vanivilas Sagar	VVS 27	38	76	29	54.58	13	50	25.63
23	Rohit Surfactants Pvt Ltd	0.6	Vanivilas Sagar	VVS 27	39	76	29	55.82	13	50	21.95
24	Rohit Surfactants Pvt Ltd	0.6	Vanivilas Sagar	VVS 27	40	76	29	56.66	13	50	18.43
25	Rohit Surfactants Pvt Ltd	0.6	Vanivilas Sagar	VVS 27	41	76	29	57.74	13	50	14.48

26	Brindavan Agro	0.6	Vanivilas Sagar	VVS 33	42	76	29	58.71	13	50	10.83
27	Rohit Surfactants Pvt Ltd	0.6	Vanivilas Sagar	VVS 27	43	76	29	59.10	13	50	8.39
28	Brindavan Agro	0.6	Vanivilas Sagar	VVS 33	44	76	29	59.84	13	50	4.48
29	Patel Shanti Steels P. Ltd.	0.6	Vanivilas Sagar	VVS 32	47	76	30	2.59	13	49	51.64
30	Cooper Foundry	0.6	Vanivilas Sagar	VVS 26	48	76	30	9.48	13	49	46.59
31	Cooper Foundry	0.6	Vanivilas Sagar	VVS 26	49	76	30	9.79	13	49	42.32
32	Cooper Foundry	0.6	Vanivilas Sagar	VVS 26	50	76	30	10.50	13	49	38.93
33	Cooper Foundry	0.6	Vanivilas Sagar	VVS 26	51	76	30	10.88	13	49	36.75
34	Laxmi Organics	0.6	Vanivilas Sagar	VVS 25	52	76	30	12.08	13	49	31.54
35	Laxmi Organics	0.6	Vanivilas Sagar	VVS 25	53	76	30	12.99	13	49	27.69
36	Jitendra D. Majetha	0.6	Vanivilas Sagar	VVS 31	57	76	30	23.06	13	49	9.73
37	Patel Shanti Steels P. Ltd.	0.6	Vanivilas Sagar	VVS 21	72	76	30	58.20	13	47	42.69
38	Unnathi Projects Ltd	0.6	Vanivilas Sagar	VVS 30	73	76	30	59.38	13	47	39.40
39	Primetex Apparels India	0.6	Vanivilas Sagar	VVS 24	76	76	31	1.44	13	47	29.40
40	Neharaj Energy	0.8	GIM-II	ELP-2	2	76	28	32.73	13	58	15.64
41	Jubilee Textiles	0.8	GIM-II	ELP-3	3	76	28	29.82	13	58	18.10
42	Vivek Trading Company	0.8	GIM-II	ELP-11	4	76	28	27.14	13	58	21.08
43	Prasad Technology Park	0.8	GIM-II	ELP-18	10	76	28	11.45	13	58	53.68
44	Unnathi Projects Ltd	0.8	GIM-II	ELP-19	11	76	28	10.37	13	58	57.36
45	Prasad Technology Park	0.8	GIM-II	ELP-18	12	76	28	3.46	13	59	0.89
46	Avanti Feeds Ltd	0.8	GIM-II	ELP-4	13	76	27	59.21	13	59	7.52
47	Avanti Feeds Ltd	0.8	GIM-II	ELP-4	14	76	27	57.29	13	59	11.01
48	Avanti Feeds Ltd	0.8	GIM-II	ELP-4	15	76	27	58.49	13	59	15.43
49	Avanti Feeds Ltd	0.8	GIM-II	ELP-4	16	76	27	58.88	13	59	19.11
50	SrinivasaCystine Ltd	0.8	GIM-II	ELP-5	17	76	27	58.74	13	59	22.95
51	SrinivasaCystine Ltd	0.8	GIM-II	ELP-5	18	76	27	58.56	13	59	26.85
52	B.V.Finance and Leasing	0.8	GIM-II	ELP-6	19	76	27	53.77	13	59	33.72
53	B.V.Finance and Leasing	0.8	GIM-II	ELP-6	20	76	27	54.63	13	59	37.84
54	Amrit Bottlers	0.8	GIM-II	ELP 13	21	76	27	53.59	13	59	41.95
55	Brindavan Agro	0.8	GIM-II	ELP-7	22	76	27	51.71	13	59	45.44
56	Indian Power Corporation Ltd	0.8	GIM-II	ELP-15	23	76	27	54.87	13	59	49.52
57	Indian Power Corporation Ltd	0.8	GIM-II	ELP-15	24	76	27	57.13	13	59	52.67
58	Indian Power Corporation Ltd	0.8	GIM-II	ELP-15	25	76	27	55.72	13	59	56.52

59	Brindavan Agro	0.8	GIM-II	ELP-7	26	76	27	26.08	13	59	50.38
60	Brindavan Agro	0.8	GIM-II	ELP-7	27	76	27	27.18	13	59	43.87
61	Brindavan Agro	0.8	GIM-II	ELP-7	28	76	27	26.18	13	59	39.64
62	Indian Power Corporation Ltd	0.8	GIM-II	ELP-16	29	76	25	23.82	13	59	47.27
63	Indian Power Corporation Ltd	0.8	GIM-II	ELP-16	30	76	25	29.91	13	59	45.28
64	Indian Power Corporation Ltd	0.8	GIM-II	ELP-16	31	76	25	33.12	13	59	42.33
65	Indian Power Corporation Ltd	0.8	GIM-II	ELP-16	32	76	25	38.83	13	59	38.39
66	Indian Power Corporation Ltd	0.8	GIM-II	ELP-16	33	76	25	42.15	13	59	36.06
67	Indian Power Corporation Ltd	0.8	GIM-II	ELP-16	34	76	25	43.66	13	59	32.54
68	Mumbai Stock Brokers Pvt. Ltd.	0.8	Gim-II	ELP-21	40	76	24	8.45	13	59	48.78
69	D. R. Container Terminal	0.8	Gim-II	ELP-22	41	76	24	3.54	13	59	41.68
70	D. R. Container Terminal	0.8	GIM-II	ELP-22	42	76	23	40.29	13	59	37.55
71	Indian Power Corporation Ltd	0.8	GIM-II	ELP-26	52	76	25	11.40	13	59	15.90
72	Indian Power Corporation Ltd	0.8	GIM-II	ELP-26	53	76	25	13.08	13	59	12.35
73	Indian Power Corporation Ltd	0.8	GIM-II	ELP-26	54	76	25	15.36	13	59	9.01
74	Indian Power Corporation Ltd	0.8	GIM-II	ELP-26	55	76	25	17.30	13	59	5.46
75	Siddaganga Oil Extractions Ltd.	0.8	GIM-II	ELP-32	63	76	25	29.79	13	58	37.36
76	Siddaganga Oil Extractions Ltd.	0.8	GIM-II	ELP-32	64	76	25	31.94	13	58	34.06
77	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	1	75	44	15.11	15	11	48.10
78	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	2	75	44	17.51	15	11	44.22
79	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	3	75	44	18.61	15	11	41.19
80	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	4	75	44	18.89	15	11	37.80
81	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	5	75	44	16.41	15	11	35.01
82	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	6	75	43	31.81	15	12	48.51
83	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	7	75	43	50.49	15	12	41.81
84	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	8	75	43	52.29	15	12	38.71
85	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	9	75	43	55.60	15	12	35.29
86	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	10	75	44	23.26	15	13	17.08

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87	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	11	75	44	2.08	15	12	29.80
88	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	12	75	44	10.74	15	11	52.99
89	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	13	75	44	11.63	15	11	50.29
90	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	14	75	44	23.69	15	13	14.09
91	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	15	75	44	23.30	15	13	9.40
92	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	16	75	44	21.78	15	13	6.22
93	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	17	75	44	20.10	15	13	3.59
94	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	18	75	44	19.52	15	13	0.10
95	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	19	75	44	18.39	15	12	54.90
96	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	20	75	44	19.29	15	12	52.10
97	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	21	75	44	18.00	15	12	49.11
98	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	22	75	44	20.00	15	12	45.39
99	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	23	75	44	20.39	15	12	42.01
100	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	24	75	44	4.59	15	12	27.41
101	Wind World Wind Farms (Krishna) Ltd	0.6	Gadag	EWKL H-6	25	75	44	3.61	15	12	24.29
102	Wind World Wind Farms (Karnataka) Ltd	0.8	Gadag	EWKL H-7	26	75	44	2.69	15	12	21.01
103	Wind World Wind Farms (Karnataka) Ltd	0.8	Gadag	EWKL H-7	27	75	43	57.98	15	12	16.99
104	Wind World Wind Farms (Karnataka) Ltd	0.8	Gadag	EWKL H-7	28	75	43	58.31	15	12	13.31
105	Wind World Wind Farms (Karnataka) Ltd	0.8	Gadag	EWKL H-7	29	75	44	1.71	15	12	10.30
106	Dinesh Pouches	0.8	EP-II	EP2-26	2	76	18	46.56	13	59	23.86
107	UshDev International	0.8	EP-II	EP2-24	3	76	18	49.11	13	59	14.58
108	UshDev International	0.8	EP-II	EP2-24	4	76	18	50.56	13	59	10.92
	Total Capacity (MW)	73.6									

A.3. Parties and project participants

Parties involved	Project participants	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
India (host)	M/s Wind World (India) Limited	No
Netherlands	ACT Financial Solutions B.V.	Yes
Germany	First Climate Markets A.G. ; Statkraft Markets GmbH	Yes
Australia	WeAct Pty Ltd.	Yes

A.4. References to applied methodologies and standardized baselines

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a) The approved consolidated baseline and monitoring methodology ACM0002, Version 6.0 (19 May 2006) has been used. The title of the baseline and monitoring methodologies is “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”.

b) Tool for the demonstration and assessment of additionality – Version 3.0

Further information with regards to the methodology / tools can be obtained at <http://cdm.unfccc.int/methodologies/PAmethodologies/approved.html>

A.5. Crediting period type and duration

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The length of the Crediting period of the project activity as per registered PDD is 10 years (Fixed). The crediting period start date is 01/07/2010 and length of crediting period is 10 years (from 01/07/2010 to 30/06/2020).

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

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The Project involves 64 wind energy converters (WECs) of Wind World make 600 kW E-40 and 44 WECs of Wind World make 800 kW E-48 totalling 108 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 \pm 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	29/09/2005
2	Vivek Trading Company	0.8	GIM-II	30/09/2005
3	Jubilee Textiles	0.8	GIM-II	29/09/2005
4	Prasad Technology Park	1.6	GIM-II	31/03/2006
5	SrinivasaCystine Ltd	1.6	GIM-II	29/09/2005 & 30/09/2005
6	Avanti Feeds Ltd	3.2	GIM-II	29/09/2005
7	Siddaganga Oil Extractions Ltd.	1.6	GIM-II	31/03/2006
8	Unnathi Projects Ltd	1.8	VanivilasSagar	30/03/2005
9	Unnathi Projects Ltd	0.6	VanivilasSagar	23/03/2005
10	B.V.Finance and Leasing	1.6	GIM-II	29/09/2005 & 30/09/2005
11	Shilpa Medicare Ltd	1.2	VanivilasSagar	30/03/2005
12	Cooper Foundry	2.4	VanivilasSagar	30/09/2004 & 14/10/2004
13	I. G. E. (India)	0.6	VanivilasSagar	30/03/2005
14	International Conveyors Ltd	0.6	VanivilasSagar	30/03/2005
15	Jitendra D. Majetha	0.6	VanivilasSagar	23/03/2005
16	Patel Shanti Steels P. Ltd.	0.6	VanivilasSagar	24/09/2004
17	Patel Shanti Steels P. Ltd.	0.6	VanivilasSagar	23/03/2005
18	Swaraj PVC Pipes P. Ltd.	0.6	VanivilasSagar	30/03/2005
19	Amrit Bottlers	0.8	GIM-II	30/09/2005
20	Amrit Bottlers	1.2	VanivilasSagar	30/03/2005
21	Brindavan Agro	1.2	VanivilasSagar	23/03/2005
22	Brindavan Agro	3.2	GIM-II	29/09/2005 & 30/09/2005
23	Rohit Surfactants Pvt Ltd	6	VanivilasSagar	30/09/2004 & 30/11/2004
24	Unnathi Projects Ltd	0.8	GIM-II	31/03/2006
25	Primetex Apparels India	0.6	VanivilasSagar	30/09/2004
26	MK Agrotech Private Ltd	1.2	VanivilasSagar	30/03/2005
27	Laxmi Organics	1.2	VanivilasSagar	30/09/2004 & 21/10/2004
28	S.E.Investment	2.4	VanivilasSagar	23/03/2005
29	Dinesh Pouches	0.8	EP-II	29/03/2006
30	UshDev International	1.6	EP-II	29/03/2006
31	Mumbai Stock Brokers Pvt. Ltd.	0.8	GIM-II	31/03/2006

32	D. R. Container Terminal	1.6	GIM-II	31/03/2006
33	Indian Power Corporation Ltd	2.4	GIM-II	15/02/2006
34	Indian Power Corporation Ltd	4.8	GIM-II	15/02/2006
35	Indian Power Corporation Ltd	3.2	GIM-II	31/03/2006
36	Wind World Wind Farms (Karnataka) Ltd	3.2	Gadag	26/03/2005
37	Wind World Wind Farms (Krishna) Ltd	15	Gadag	15/03/2005

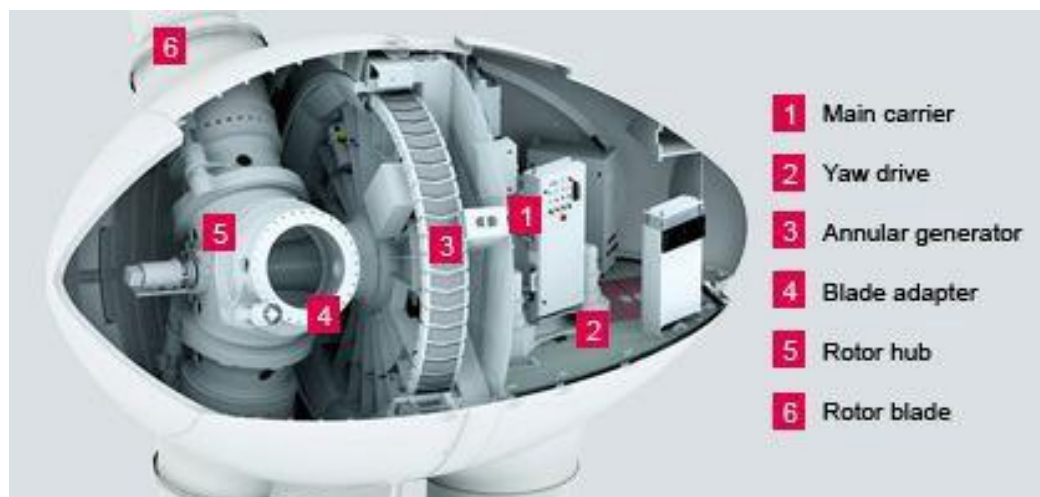
WWIL's operation and maintenance activities are ISO 9001:2008 certified and all the events are recorded at the project site. Referring to the data available, it can be inferred that there have not been any major special event for any machines that are included in the project activity. Project activity is in continuous operation from the date of commissioning. There was no major break down except scheduled maintenance.

In this tenure, there was no event or situation occurred which may impact the applicability of the applied methodology.

The Project involves 64 wind energy converters (WECs) of Enercon make 600 kW E-40 and 44 WECs of Enercon make 800 kW E-48 totalling 108 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 \pm 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 drawal (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 System.
- 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.

Figure: E-40 Diagram (Cross sectional drawing of nacelle E-40 / 600 kW).



B.2. Post-registration changes

B.2.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents

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The deviation has been applied by the PP and was approved by UNFCCC on 21/03/2012. This deviation was applicable for first monitoring period only.

B.2.2. Corrections

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The project activity is a bundled wind project of installed capacity 73.6 MW, comprising of 33 investors, in a configuration of 64 x 600 kW machines and 44 x 800 kW machines. While the registered PDD and the validation report mentioned the correct capacity of the project activity as 73.6 MW, the configuration was mentioned wrongly as 52 x 600 kW and 53 x 800 kW. In this regard, corrections were applied and revised PDD was submitted. The revised PDD as has Version 7.0 and completion date of the revised PDD as 23/08/2012.

The reference of this PRC is:

The PRC-1286-001, approved dated 11 Jan 2013.

B.2.3. Changes to the start date of the crediting period

>>

There are no changes to the start date of the crediting period.

B.2.4. Inclusion of monitoring plan

>>

Not applicable

B.2.5. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents

>>

The revision in monitoring was applied and same was approved by UNFCCC on 16/02/2012.

B.2.6. Changes to project design

>>

Not applicable

B.2.7. Changes specific to afforestation or reforestation project activity

>>

Not applicable

SECTION C. Description of monitoring system

>>

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 substations as shown in Annex-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,

$$EG_y (\text{Sub project}) = EG_{\text{export}} - 115\% * EG_{\text{import}} - \text{Transmission Loss (TE)}$$

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)

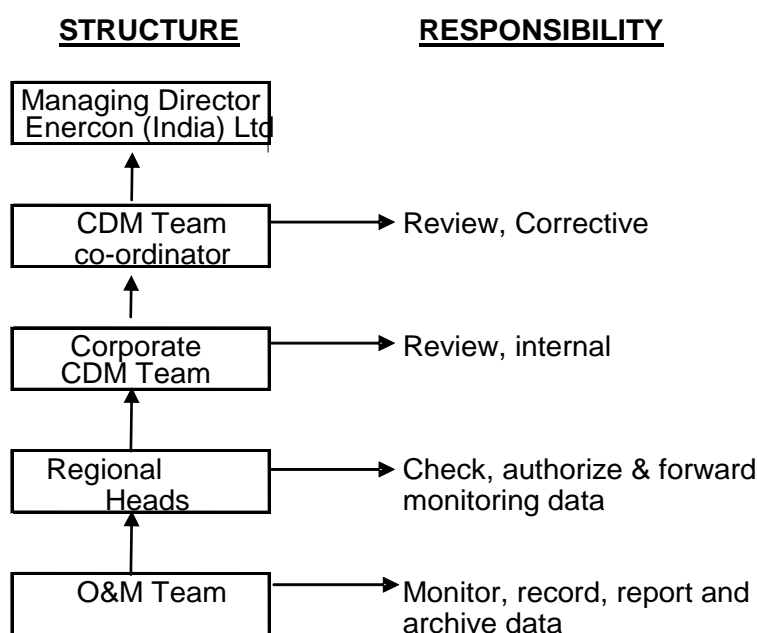
JMR is signed by the representatives of WWIL and the state utility. The net electricity supplied to the grid can be cross checked from the invoices for each of the sub project raised on the state utility for supply of net electricity supplied to the grid.

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 Wind World 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 Wind World India Limited. The operational and management structure implemented by WWIL 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 WWIL'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 WWIL Training Academy provides need-based training to meet the training requirements of WWIL 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 WWIL 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 WWIL 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 Annex-1.

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

The details of meters installed at the site for measuring export and import by project activity are also mentioned therein.

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 in the Annex 2 of this report.

SECTION D. Data and parameters

D.1. Data and parameters fixed ex ante

Data/Parameter	EF _{Grid,OM,y}									
Unit	tCO ₂ e/MWh									
Description	Operating Margin Emission Factor of Southern Region 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	<table><tr><td>2002 – 03</td><td>0.99702</td></tr><tr><td>2003 – 04</td><td>1.00937</td></tr><tr><td>2004 – 05</td><td>1.00376</td></tr><tr><td>Average</td><td>1.00338</td></tr></table>		2002 – 03	0.99702	2003 – 04	1.00937	2004 – 05	1.00376	Average	1.00338
2002 – 03	0.99702									
2003 – 04	1.00937									
2004 – 05	1.00376									
Average	1.00338									
Choice of data or measurement methods and procedures	The CEA CO ₂ Baseline Database is the most authentic data available in India since it has been prepared & published by Central Electricity Authority, Ministry of Power, Government of India. Hence it is an appropriate source.									

Purpose of data/parameter	To calculate Baseline Emission.
Additional comments	The value is calculated on ex-ante basis and it will remain same throughout the crediting period.

Data/Parameter	$EF_{Grid,BM,y}$
Unit	tCO ₂ e/MWh
Description	Build Margin Emission Factor of Southern Region 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	0.718
Choice of data or measurement methods and procedures	The CEA CO ₂ Baseline Database is the most authentic data available in India since it has been prepared & published by Central Electricity Authority, Ministry of Power, Government of India. Hence it is an appropriate source.
Purpose of data/parameter	To calculate Baseline Emission.
Additional comments	The value is calculated on ex-ante basis and it will remain same throughout the crediting period.

Data/Parameter	EF_y or $EF_{Grid,CM,y}$
Unit	tCO ₂ e/MWh
Description	Combined Margin Emission Factor of Southern Region Electricity Grid
Source of data	Calculated
Value(s) applied	0.93204
Choice of data or measurement methods and procedures	Calculated using the build margin and operating margin data from CEA database. In case of wind power projects default weights of 0.75 for EF_{OM} and 0.25 for EF_{BM} are applicable, hence calculated with 75% & 25% weightage.
Purpose of data/parameter	To calculate Baseline Emission.
Additional comments	The value is calculated on ex-ante basis and it will remain same throughout the crediting period.

D.2. Data and parameters monitored

Data/parameter:	EGy
Unit	MWh (Mega-Watt hour)
Description	Net electricity supplied to the grid by the Project
Measured/calculated/default	Calculated
Source of data	Electricity supplied to the grid as per Joint Meter Readings (Form B) taken at 33kV metering point for each of the sub project included in the project activity.
Value(s) of monitored parameter	105,401.60

Monitoring equipment	<p>Metering system for the project activity consists of dedicated main and check meters for each of the sub project owner included in the project activity at 33 kV metering location. Additionally, another set of main and check meters (bulk meters) are installed at the substation to which the project activity's sub-projects are connected with projects of other project developers.</p> <p>The subprojects included in the project activity are connected to respective WWIL substations as shown in Annex-1.</p> <p>The bulk meters installed at the substation are also connected to other sub project activities of the same project and to other project activities. Based on individual readings of each meter at the sub project activity site and of respective bulk meters at the substation, a factor known as Transmission Loss% is calculated and recorded by the by the statutory authority. The transmission loss% calculated by the state utility is endorsed / confirmed jointly by the representatives of WWIL. Each meter is also assigned a Multiplication Factor (MF) based on the CT ratio of the installation; this (MF) is displayed at the metering station and is also recorded in the JMR (Form B). The meter readings are multiplied with the MF to which the transmission loss is applied to arrive at the net export of power from the sub project activity. The import readings recorded at the sub project activity site are adjusted for a default factor of 15%. The difference of net export and 115% of import reading is recorded as net electricity supplied to the grid by the sub project activity and is shown as the net energy to be billed in the JMR (Form B). The aggregate sum of all such individual net electricity supplied by the bundle components is reckoned as the net electricity supplied to the grid by the project for calculation of Certified Emission Reductions.</p> <p>The Joint Meter Readings (JMR) issued in FORM B by the statutory authority contains recorded details of opening and closing meter readings of export and import as per the main and check meters of each sub project activity, the transmission losses apportioned and the net electricity supplied by the sub project activity. The JMR is recorded by the authorised representative of the power purchasing company in the presence of the authorised representative of the project and is duly signed by both in acceptance of the correctness of the entries. 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 values of electricity supplied to the grid are sourced from JMR for the sub projects at 33 kV metering point.</p>
Calculation method (if applicable):	$EG_y = EG_{\text{export}} - 115\% * EG_{\text{import}} - \text{Transmission Loss (TE)}$
QA/QC procedures:	QA/QC procedure can be referred from the section C.
Purpose of data:	Baseline Emission calculations
Additional comments:	The data monitored and required for verification and issuance be kept and archived electronically in hard copies for two years after the end of the crediting period or the last issuance of CERs, whichever occurs later.

Data/parameter:	EG_{export}
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 (Form B) 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	106,874.02
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 (Form B) for the sub projects at 33 kV metering point.
Calculation method (if applicable):	Not applicable
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:	Calculation of baseline emissions
Additional comments:	The data will be archived for crediting period + 2 years.

Data/parameter:	EG_{import}
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	194.77
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):	Not applicable
QA/QC procedures:	QA/QC procedures are implemented by state utility pursuant to the provisions of the power purchase agreement, referred in the section C.
Purpose of data:	Calculation of baseline emissions
Additional comments:	The data will be archived for crediting period + 2 years.

Data/parameter:	TE
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	1,277.65

parameter	
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 Wind World 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 (Form B) for all sub projects at 33 kV metering point.</p>
Calculation method (if applicable):	Not applicable
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:	Calculation of baseline emissions
Additional comments:	The data will be archived for crediting period + 2 years.

D.3. Implementation of sampling plan

>>

Not Applicable

SECTION E. Calculation of emission reductions or net anthropogenic removals

E.1. Calculation of baseline emissions or baseline net removals

>>

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 approved revised 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 (01/04/2017 – 31/12/2017)

$$= 105,401.60 \text{ (MWh)} * 0.93204 \text{ (tCO}_2\text{e/MWh)}$$

$$= 98,238 \text{ tCO}_2\text{e}$$

E.2. Calculation of project emissions or actual net removals

>>

Since 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 emissions

>>

No leakage is considered from the project activity as per approved methodology ACM0002

E.4. Calculation of emission reductions or net anthropogenic removals

	Baseline GHG emissions or baseline net GHG removals (t CO ₂ e)	Project GHG emissions or actual net GHG removals (t CO ₂ e)	Leakage GHG emissions (t CO ₂ e)	GHG emission reductions or net anthropogenic GHG removals (t CO ₂ e)		
				Before 01/01/2013	From 01/01/2013	Total amount
Total (01/04/2017 – 31/12/2017)	98,238	0	0	0	98,238	98,238

E.5. Comparison of emission reductions or net anthropogenic removals achieved with estimates in the registered PDD

Amount achieved during this monitoring period (t CO ₂ e)	Amount estimated ex ante (t CO ₂ e)
98,238	119,978

E.5.1. Explanation of calculation of “amount estimated ex ante for this monitoring period in the PDD”

>> The emission reduction for the current monitoring period is 18.12 % less than the estimated value in the registered PDD for the same monitoring period.

E.6. Remarks on increase in achieved emission reductions

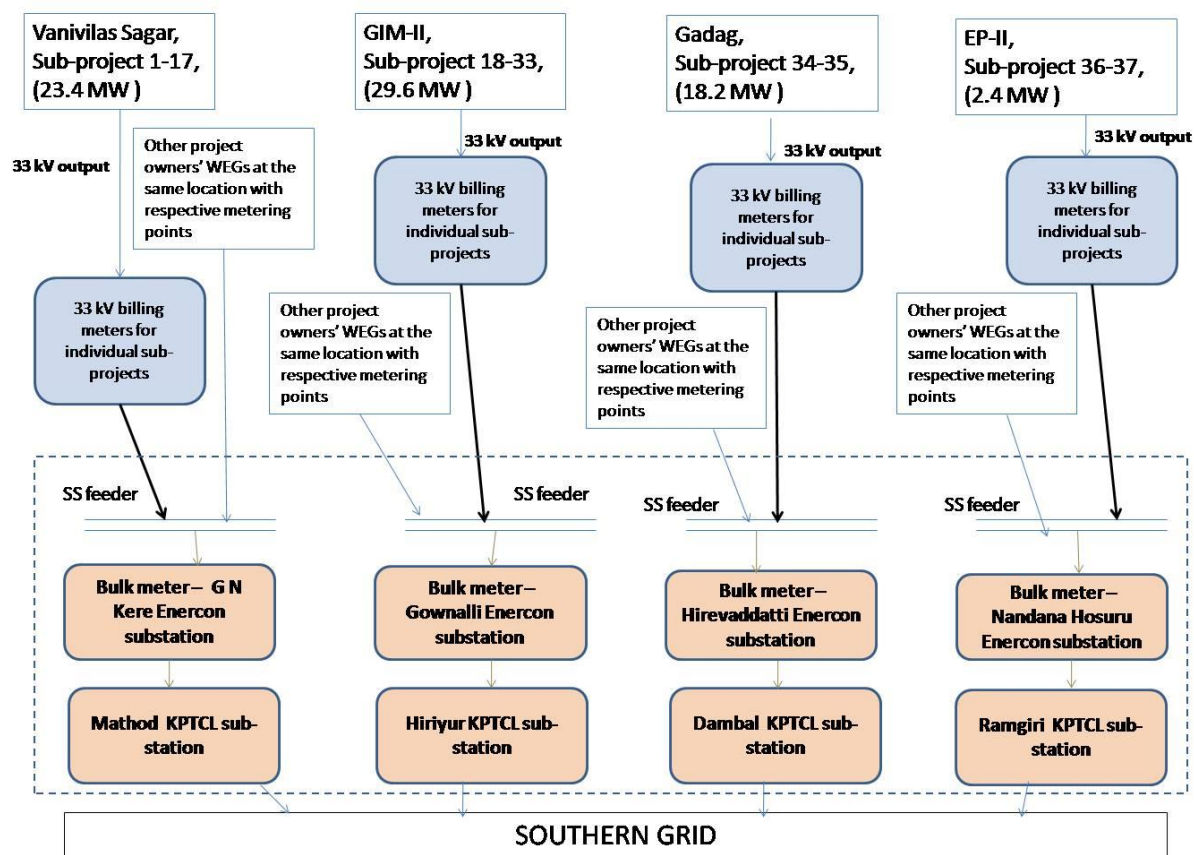
>>

The emission reduction for the current monitoring period is 18.12 % less than the estimated value in the registered PDD for the same monitoring period. This is primarily due to seasonal nature of wind power projects in India.

E.7. Remarks on scale of small-scale project activity

>>

Not Applicable

Annex 1Metering 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:

S. No	Name of Customers	Capacity (MW)	R.R. NO.	Site Name	Name of Wind World 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	Wind World Wind Farms (Krishna) Ltd	15	HBL/TL&SS/ WF/EWKLH/ 6	Gadag	Gadag substation at Hiredawatti	0.2S
35	Wind World 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				
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The details of meters (Bulk) installed at receiving station for the purpose of measuring and allotting transmission losses are provided below:

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/SPML/5	0.2S
4	VVS Sub-station at G N Kere	VVS-01	0.2S
		VVS-02	0.2S

Annex 2Details of Meter tests/calibration

Individual Investors' meters:

S. No.	Name of Customer	Site	R.R.NO.	Meter Sr. No. (Main & Check)	Date of Calibration (relevant to Current MP)			Due Date of calibration
					2016	2017	2018	
1	Neharaj Energy	GIM II	ELP-2	5342751 5342752	21-05-2016	16-05-2017	18.05.2018	18.05.2019
2	Vivek Trading Company		ELP-11	05436122 05436121	21-05-2016	16-05-2017	29.11.2018	29.11.2019
3	Jubilee Textiles		ELP-3	5342756 5342758	08-11-2016	16-05-2017	24.05.2018	24.05.2019
4	Prasad Technology Park		ELP-18	5271047 5271049	21-05-2016	16-05-2017	24.05.2018	24.05.2019
5	Srinivasa Cystine Ltd		ELP-5	5341445 5341446	08-11-2016	16-05-2017	24.05.2018	24.05.2019
6	Avanti Feeds Ltd		ELP-4	5341447 5341448	08-11-2016	16-05-2017	24.05.2018	24.05.2018
87	Siddaganga Oil Extractions Ltd		ELP-32	5436133 5436139	09-11-2016	17-05-2017	25.08.2018	25.08.2019
8	Unnathi Projects Ltd	VVS	VVS 36	5271060 5271059	05-06-2015	21-09-2016	26.06.2018	26.06.2019
9	Unnathi Projects Ltd		VVS 30	5271065 5271066	06-06-2015	20-09-2016	26.06.2018	26.06.2019
10	B.V.Finance and Leasing		ELP-6	5341441 5341450	05-11-2016	16-05-2017	24.05.2018	24.05.2019
11	Shilpa Medicare Ltd	VVS	VVS 41	5271043 5293305	19-12-2016	29.12.2017	03.12.2018	03.12.2019
12	Cooper Foundry		VVS 26	4219540 4219539	23-03-2016	25-03-2017	13.03.2018	13.03.2019

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13	I. G. E. (India)		VVS 40	5293313 5271056	15-03-2016	25-03-2017	13.03.2018	13.03.2019
14	International Conveyors Ltd		VVS 38	5271044 5271048	15-03-2016	25-03-2017	12.03.2018	12.03.2019
15	Jitendra D. Majetha		VVS 31	5271053 5271054	20-09-2016	19-06-2017	12.03.2018	12.03.2019
16	Patel Shanti Steels P. Ltd.		VVS 21	4187660 4187668	20-09-2016	17-06-2017	12.03.2018	12.03.2019
17	Patel Shanti Steels P. Ltd.		VVS 32	5271050 5271051	21-09-2016	19-06-2017	12.03.2018	12.03.2019
18	Swaraj PVC Pipes P. Ltd.		VVS 39	5271045 7022947	22-12-2016	19-06-2017	12.03.2018	12.03.2019
19	Amrit Bottlers	GIM II	ELP 13	5342863 5342864	08-11-2016	16-05-2017	12.03.2018	12.03.2019
20	Amrit Bottlers	VVS	VVS 42	5293302 5293303	19-12-2016	25-03-2017	12.03.2018	12.03.2019
21	Brindavan Agro	GIM II	ELP-7	6675387 6606807	21-05-2016 24-08-2016 08-11-2016	17-02-2017 16-05-2017	12.03.2018	12.03.2019
22	Brindavan Agro	VVS	VVS 33	5271052 5271061	19-12-2016	19-06-2017	12.03.2018	12.03.2019
23	Rohit Surfactants Pvt Ltd		VVS 27	4219529 4219545	15-03-2016	19-06-2017	12.03.2018	12.03.2019
24	Unnathi Projects Ltd	GIM II	ELP-19	5390227 5390228	21-05-2016	05-11-2016	12.03.2018	12.03.2019
25	Primetex Apparels India	VVS	VVS 24	1987484 ¹ 4219534	25-11-2016	24-03-2017	12.03.2018	12.03.2019
26	MK Agrotech Private Ltd		VVS 43	5389978 5293312	19-12-2016	19-06-2017	12.03.2018	12.03.2019

¹Earlier main meter no. was 4186267

27	Laxmi Organics		VVS 25	4219547 4219580	23-03-2016	25-03-2017	12.03.2018	12.03.2019
28	S.E.Investment		VVS 35	6760776 7022917	19-12-2016	19-06-2017	12.03.2018	12.03.2019
29	Dinesh Pouches	EP-II	EP2-26	5463836 5463837	26-12-2016	16.12.17	12.03.2018	12.03.2019
30	UshDev International		EP2-24	5463965 5463972	26-12-2016	16.12.17	12.03.2018	12.03.2019
31	Mumbai Stock Brokers Pvt. Ltd.	GIM II	ELP-21	5389968 5389969	09-11-2016	17-05-2017	12.03.2018	12.03.2019
32	D. R. Container Terminal		ELP-22	5389976 5389980	09-11-2016	17-05-2017	12.03.2018	12.03.2019
33	Indian Power Corporation Ltd		ELP-15	5342757 5342759	08-11-2016	16-05-2017	12.03.2018	12.03.2019
34	Indian Power Corporation Ltd		ELP-16	5436134 5436138	11-08-2016	17-05-2017	12.03.2018	12.03.2019
35	Indian Power Corporation Ltd		ELP-26	5436125 5436128	09-11-2016	17-05-2017	12.03.2018	12.03.2019
36	Wind World Wind Farms (Karnataka) Ltd	Gadag	HBL/TL &SS/ WF/EW KLH/07	6607750 5271064	22-12-2016	17-05-2017	12.03.2018	12.03.2019
37	Wind World Wind Farms (Krishna) Ltd		HBL/TL &SS/ WF/EW KLH/6	4259886 4259887	22-12-2016	17-05-2017	12.03.2018	12.03.2019

Substation Meters:

S. No	Name of Substation	Main meter	Check meter	Calibration Test		Calibration Test
				2016	2017	2018
1	EP-II Sub-station at NandanaHosuru	15192487	15192488	14-09-2016 16-12-2016	25-07-2017	18-08-2018
		15192489	15192490	16-12-2016		
2	GIM-II Sub-station at Gownalli	15192493	15192494	07-09-2016	13-07-2017	18-08-2018
		14195731	14195735	21-12-2016		
3	Gadag Sub-station at Hirevaddatti	4249351	4249324	18-12-2017	25-07-2017	18-08-2018
4	VVS Sub-station at	14194662	14194663	13-07-2017	13-07-2017	18-08-2018
	G N Kere	14194678	14194679	20-10-2015 07-09-2016	23-10-2017	

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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
07.0	31 May 2019	Revision to: <ul style="list-style-type: none"> • Ensure consistency with version 02.0 of the “CDM project standard for project activities” (CDM-EB93-A04-STAN); • Add a section on remarks on the observance of the scale limit of small-scale project activity during the crediting period; • Add "changes specific to afforestation or reforestation project activity" as a possible post-registration changes; • Clarify the reporting of net anthropogenic GHG removals for A/R project activities between two commitment periods; • Make editorial improvements.
06.0	7 June 2017	Revision to: <ul style="list-style-type: none"> • Ensure consistency with version 01.0 of the “CDM project standard for project activities” (CDM-EB93-A04-STAN); • Make editorial improvements.
05.1	4 May 2015	Editorial revision to correct version numbering.
05.0	1 April 2015	Revisions to: <ul style="list-style-type: none"> • Include provisions related to delayed submission of a monitoring plan; • Provisions related to the Host Party; • Remove reference to programme of activities; • Overall editorial improvement.
04.0	25 June 2014	Revisions to: <ul style="list-style-type: none"> • Include the Attachment: Instructions for filling out the monitoring report form (these instructions supersede the "Guideline: Completing the monitoring report form" (Version 04.0)); • Include provisions related to standardized baselines; • Add contact information on a responsible person(s)/ entity(ies) for completing the CDM-MR-FORM in A.6 and Appendix 1; • Change the reference number from <i>F-CDM-MR</i> to <i>CDM-MR-FORM</i>; • Editorial improvement.
03.2	5 November 2013	Editorial revision to correct table in page 1.
03.1	2 January 2013	Editorial revision to correct table in section E.5.
03.0	3 December 2012	Revision required to introduce a provision on reporting actual emission reductions or net GHG removals by sinks for the period up to 31 December 2012 and the period from 1 January 2013 onwards (EB 70, Annex 11).
02.0	13 March 2012	Revision required to ensure consistency with the "Guidelines for completing the monitoring report form" (EB 66, Annex 20).
01.0	28 May 2010	EB 54, Annex 34. Initial adoption.

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