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

MONITORING REPORT

Title of the project activity	Vaayu India Wind Power Project in Jaisalmer, Rajasthan
Reference number of the project activity	5186
Version number of the monitoring report	1
Completion date of the monitoring report	17/07/2012
Registration date of the project activity	20/09/2011
Monitoring period number and duration of this monitoring period	01/10/2011-30/06/2012
Project participant(s)	Vaayu (India) Power Corporation Private Limited
Host Party(ies)	India
Sectoral scope(s) and applied methodology(ies)	Energy industries (renewable/ non-renewable sources). Approved consolidated baseline methodology ACM0002 (Version 12.1.0, EB 58)
Estimated amount of GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period in the registered PDD	87,159
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period	62,122

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 purpose of the project activity is to utilize renewable wind energy for generation of electricity. The project activity replaces anthropogenic emissions of greenhouse gases (GHG's) into the atmosphere, which is estimated to be approximately 62,122 tCO_2e for this monitoring period, by displacing the equivalent amount of electricity generation through the operation of existing fuel mix in the grid comprising mainly fossil fuel based power plants and future capacity expansions connected to the grid. In the absence of the project activity the equivalent amount of electricity would have been generated from the connected/ new power plants in the NEWNE grid, which are/ will be predominantly based on fossil fuels. Whereas the electricity generation from operation of Wind Energy Convertors (WEC's) is emission free.

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

The project activity involves supply, erection, commissioning and operation of 63 machines of rated capacity 800 KW each. The machines are Enercon E-53 make. 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 14/05/2011 and 14/07/2011. The expected operational lifetime of the project is for 20 years. The project activity was registered as CDM project on 20/09/2011. The first monitoring period is from 01/10/2011 to 30/06/2012.

(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 (01/10/2011 to 30/06/2012) is 62,122 tCO2.

A.2. Location of project activity

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(a) *Host Party(ies);*

India

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

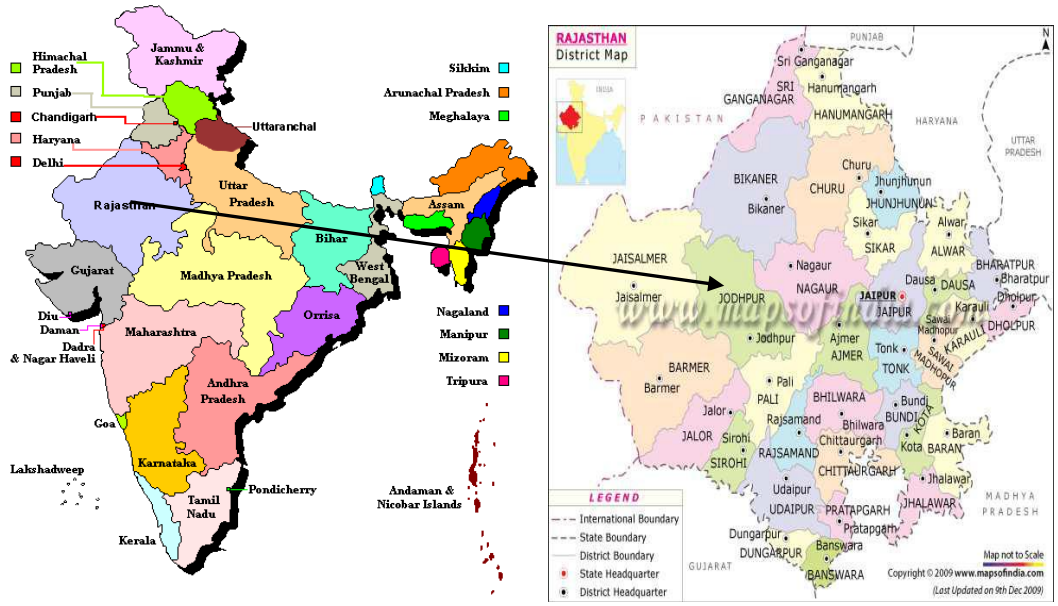
Northern Region/Rajasthan State

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

The Project is spread across Sipla, Pithla, Kotri, Senag, Barna and Khuri villages of Jaisalmer District of Rajasthan state in India.

(d) *Physical/ Geographical location.*

The Project is located in Jaisalmer district in the Indian State of Rajasthan. The wind turbines extend between Latitude N 26°40'25.4" to Latitude N 26°44'48.7" and Longitude E 70°42'13.8" to Longitude E 70°49'23.5". The longitude and latitude details of WECs are provided Appendix 2.



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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)
India (Host)	Vaayu (India) Power Corporation Private Limited	No

A.4. Reference of applied methodology

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(a) ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (Version 12.1.0, EB 58)

(b) ACM0002 draws upon the following tools which have been used in the PDD:
Tool to calculate the emission factor for an electricity system – Version 02

Tool for the demonstration and assessment of additionality – Version 5.2
Further information with regards to the methodology / tools can be obtained at http://cdm.unfccc.int/methodologies/PAmethodologies/approved.html

A.5. Crediting period of project activity

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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 01/10/2011 (from 01/10/2011 to 30/09/2021).

SECTION B. Implementation of project activity

B.1. Description of implemented registered project activity

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The starting date of operation of the project activity. For project activities that consist of more than one site, the report shall clearly describe the status of implementation and starting date of operation for each site. For CDM project activities with phased implementation, the report shall indicate the progress of the proposed CDM project activity achieved in each phase.

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

S. No.	WEG S.C. NO	No. & Capacity	Commissioning Date (dd/mm/yyyy)
1	2	1 X 800 kW	30/06/2011
2	3	1 X 800 kW	14/05/2011
3	4	1 X 800 kW	14/05/2011
4	5	1 X 800 kW	14/05/2011
5	6	1 X 800 kW	14/05/2011
6	7	1 X 800 kW	14/05/2011
7	8	1 X 800 kW	14/05/2011
8	9	1 X 800 kW	14/05/2011
9	10	1 X 800 kW	30/06/2011
10	13	1 X 800 kW	14/05/2011
11	14	1 X 800 kW	14/05/2011
12	15	1 X 800 kW	14/05/2011
13	16	1 X 800 kW	14/05/2011
14	17	1 X 800 kW	14/05/2011
15	23	1 X 800 kW	14/05/2011
16	24	1 X 800 kW	14/05/2011
17	25	1 X 800 kW	14/05/2011
18	29	1 X 800 kW	14/05/2011
19	30	1 X 800 kW	14/05/2011
20	32	1 X 800 kW	14/05/2011
21	33	1 X 800 kW	14/05/2011
22	38	1 X 800 kW	14/07/2011
23	39	1 X 800 kW	14/07/2011
24	40	1 X 800 kW	14/07/2011
25	72	1 X 800 kW	14/07/2011
26	79	1 X 800 kW	14/05/2011

27	80	1 X 800 kW	14/05/2011
28	87	1 X 800 kW	14/05/2011
29	88	1 X 800 kW	14/05/2011
30	93	1 X 800 kW	30/06/2011
31	99	1 X 800 kW	15/05/2011
32	101	1 X 800 kW	14/07/2011
33	102	1 X 800 kW	14/07/2011
34	103	1 X 800 kW	15/05/2011
35	106	1 X 800 kW	15/05/2011
36	107	1 X 800 kW	15/05/2011
37	110	1 X 800 kW	15/05/2011
38	114	1 X 800 kW	15/05/2011
39	115	1 X 800 kW	15/05/2011
40	117	1 X 800 kW	15/05/2011
41	118	1 X 800 kW	15/05/2011
42	123	1 X 800 kW	15/05/2011
43	124	1 X 800 kW	15/05/2011
44	125	1 X 800 kW	15/05/2011
45	144	1 X 800 kW	14/05/2011
46	148	1 X 800 kW	14/05/2011
47	150	1 X 800 kW	14/05/2011
48	151	1 X 800 kW	30/06/2011
49	152	1 X 800 kW	14/05/2011
50	157	1 X 800 kW	14/07/2011
51	158	1 X 800 kW	30/06/2011
52	159	1 X 800 kW	30/06/2011
53	503	1 X 800 kW	15/05/2011
54	504	1 X 800 kW	15/05/2011
55	505	1 X 800 kW	15/05/2011
56	507	1 X 800 kW	14/05/2011
57	508	1 X 800 kW	14/05/2011
58	512	1 X 800 kW	30/06/2011
59	513	1 X 800 kW	30/06/2011
60	514	1 X 800 kW	14/07/2011
61	520	1 X 800 kW	15/05/2011
62	521	1 X 800 kW	15/05/2011
63	525	1 X 800 kW	15/05/2011

The project activity involves 63-wind energy convertors (WEC's) of Enercon make (800 kW, E-53) with internal electrical lines connecting the project activity 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 average life time of the WEC is around 20 years as per the industry standards. The other salient features of the state-of-art-technology are:

Turbine model	Enercon E – 53

Rated Power	800 kW
Rated diameter	53 m
Hub height	75 m
Turbine type	Gearless horizontal axis wind turbine with variable rotor speed
Power regulation	Independent electromechanical pitch system for each blade
Cut in wind speed	2.5 m/s
Rated wind speed	12 m/s
Cut out wind speed	28 - 34 m/s
Extreme wind speed	59.5 m/s
Rated rotational speed	32 rpm
Operating range rot. Speed	12 - 29 rpm
Orientation	Upwind
No. of blades	3
Blade material	Fibre glass Epoxy reinforced with integral lightning protection
Gear box type	Gearless
Generator type	Synchronous generator
Braking	Aerodynamic
Output voltage	400 V
Yaw system	Active yawing with 4 electric yaw drives with brake motor and friction bearing
Tower	74 m Concrete

B.2. Post registration changes

B.2.1. Temporary deviations from registered monitoring plan or applied methodology

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Not Applicable

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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Not Applicable

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 12.1.0 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. Enercon (India) Limited is O&M contractor for the project activity. Enercon (India) Limited will be responsible for the maintaining all the monitoring data on behalf of VIPCPL in respect of the project activity. Enercon (India) Limited has implemented the management structure for managing the monitored data.

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, the monitoring of operating margin emission factor and build margin emission factor is not required. Further, wind based electricity generation is not associated with any kind of leakages. Hence, the sole parameter for monitoring is the electricity generated by the project and supplied to the grid.

The project is operated by Enercon (O&M contractor for the project activity) and managed by the PP. The operational and maintenance contract for the project is with Enercon. Enercon is an ISO documentation practices to ensure the reliability and availability of the data for all the activities as required from the identification of the site, wind resource assessment, logistics, finance, construction, commissioning and operation of the wind power project.

The allocation plan for the project activity is given below:-

Calculation of Net Electricity supplied to the grid:

The procedure for allocation is detailed below:

$E_{JMR,Export}$ = Electricity exported, as recorded by the main meter at the substation
$E_{JMR,Import}$ = Electricity imported, as recorded by the main meter at the substation
$E_{Controller, Export}$ = Electricity exported by a WEC, as measured at the controller
$\sum E_{Controller, Export}$ = Electricity exported by all the WECs connected to the main meter at the substation, measured at the controller of each WEC
$E_{WEG,Export}$ = Electricity exported by a WEC to the grid, calculated
$E_{WEG,Import}$ = Electrcity imported by a WEC from the grid, calculated.

Electricity exported by each WEC is apportioned on the basis of electricity exported recorded at the controller of each WEC and the electricity exported at the main meter and mentioned in the JMR. The export multiplication factor is calculated as follows-

$$\text{Export Multiplication Factor} = \frac{E_{JMR,Export}}{\sum E_{Controller, Export}} \quad \text{..... (1)}$$

Thus the energy exported by a WEC to the grid is given by the equation-

$E_{WEG,Export}$ = Export Multiplication factor X $E_{Controller, Export}$ .....(2)

As the controller meter doesn't record import, the apportioning of energy imported by each WEC is also done on the basis of electricity exported recorded at the controller of each WEC and the electricity

imported at the main meter and mentioned in the JMR. The import multiplication factor is calculated as follows-

$$\text{Import Multiplication Factor} = \frac{E_{JMR,Import}}{\sum E_{Controller,\ Export}} \quad \text{..... (3)}$$

Thus the energy imported by a WEC to the grid is given by the equation-

$E_{WEG,Import}$ = Import Multiplication factor X $E_{Controller,\ Export}$ .....(4)

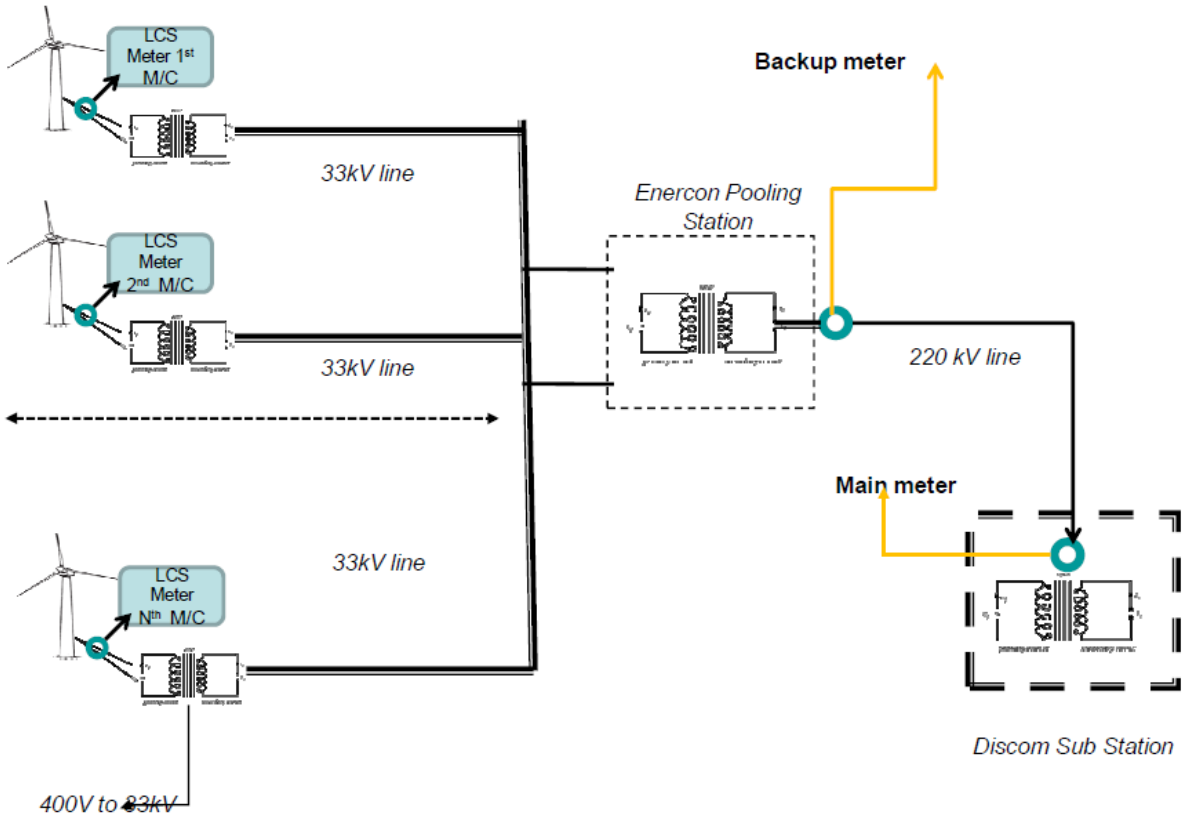
The net electricity exported by the WECs of the project is given by the equation-

$$EG_y = \sum_{Project} E_{WEG,Export} - \sum_{Project} E_{WEG,Import} \text{.....(5)}$$

The summation is done on the WECs belonging to the project activity.

The accuracy of monitoring parameter is ensured by adhering to the calibration and testing of the metering equipment once each year. Enercon is Operation and Maintenance contractor for the project activity and provides the daily generation report to the Project proponent. The project proponent also maintains the records of daily generation report and joint meter report.

Schematic diagram for the wind farm showing location of main, backup and LCS meters in the wind farm



Metering

- The electricity supplied to the grid will be metered at the substation of the utility. Representatives of Discom and Enercon will jointly take the main reading and sign the meter reading on the first day of every month. Simultaneously, the joint meter reading at backup metering system will also be taken by representatives of Discom and Enercon.
- The allocation of the electricity supplied noted at utility substation is done based on LCS meter readings retrieved by the central monitoring system.
- The meters will be jointly inspected/tested once in a year as per the provisions of PPA. The main and the backup metering systems will be sealed in presence of representatives of Enercon and RRVPN/Jodhpur Discom. Joint inspection and testing will also be carried out as and when difference in monthly meter readings exceeds the sum of maximum error as per accuracy class of main and back up meters.

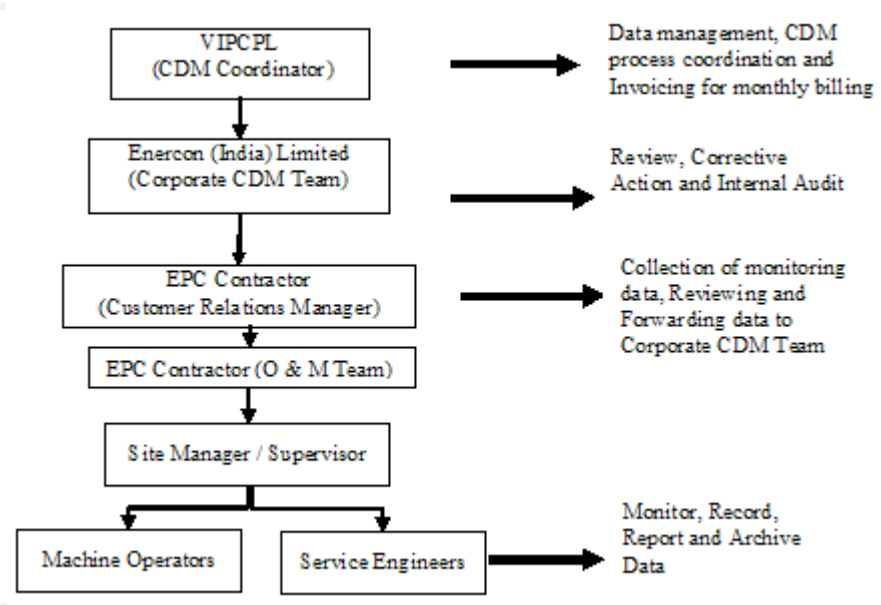
Metering Equipment and Metering Arrangement Information

- The meters are two-way meter and measure the electricity import and export and give the net electricity.
- As per the Power Purchase Agreement entered into with the electricity distribution utility, there will be two meters, one main meter and one backup meter. Both meters would be two-way export import meters that measure both export and import of electricity and provide net electricity exported to the grid.
- In case the meters are found to operate outside the permissible limits, the meters will be either replaced immediately or calibrated. Whenever a main meter goes defective, the consumption recorded by the backup meter will be referred.
- If main as well as back up metering system becomes defective, the details of the malfunctioning along with date and time and snaps shot parameters along with load survey will be retrieved from the main meter. The exact nature of the malfunctioning will be determined after analyzing the data so retrieved and the consumption recorded by the main meter will be adjusted accordingly.
- The main meter readings are apportioned based upon the LCS meter readings from the individual WECs to compute net electricity supplied from individual WECs. The LCS meter readings are archived electronically on continuous basis. Joint meter reading at the EB substation and at the pooling substation of Enercon is noted each month. Therefore cumulative LCS meter reading for each month is used for purpose of allocation of net electricity supplied to the grid from the project activity.
- Both main and back up meters will be calibrated annually.
- The LCS meters do not require calibration as the energy readings of electricity generated at the LCS meter is cross verified by the energy calculated by inverting system installed in the WECs. In case there is any mismatch in the energy values recorded by the LCS meter and the energy values calculated by the inverting system; the machine will stop working and generate the error report. The operations and maintenance staff will attend to the problem immediately in order to identify the error and correction factor will be determined.

The empirical formula applied for computing net electricity supplied to the grid is detailed in B.7.2. PP will be monitoring the data sent by the O&M contractor and the data for electricity generated by the project activity will be kept as records for the period of 10+2 years i.e. 2 years beyond the term of crediting period. Enercon is O&M contractor and will be responsible for data recording.

The main and check meters are calibrated once each year and LCS meters do not require calibration as the energy readings of electricity generated at the LCS meter is cross verified by the energy calculated by inverting system installed in the WECs. In case there is any mismatch in the energy values recorded by the LCS meter and the energy values calculated by the inverting system; the machine will stop working and

generate the error report. Furthermore the net electricity supplied to the grid that is used for calculation of emission reductions can be cross checked from the invoices raised by the PP on the state utility. Therefore there is no data uncertainty.
The operational and management structure implemented for data monitoring is as follows:



Training and maintenance requirements:

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 staff 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.

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	$EF_{grid,OM,y}$
Unit	tCO_2e/MWh
Description	Operating Margin Emission Factor of NEWNE Electricity Grid
Source of data	"CO_2 Baseline Database for Indian Power Sector", version 5 published by the Central Electricity Authority, Ministry of Power, Government of India. The "CO2 Baseline Database for Indian Power Sector" is available at www.cea.nic.in
Value(s) applied	1.00498
Purpose of data	Operating Margin Emission Factor has been calculated by the Central Electricity Authority using the simple OM approach in accordance with ACM0002.
Additional comment	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_2e/MWh
Description	Build Margin Emission Factor of NEWNE Electricity Grid
Source of data	"CO_2 Baseline Database for Indian Power Sector", version 5 published by the Central Electricity Authority, Ministry of Power, Government of India. The "CO2 Baseline Database for Indian Power Sector" is available at www.cea.nic.in
Value(s) applied	0.6752
Purpose of data	Build Margin Emission Factor has been calculated by the Central Electricity Authority in accordance with ACM0002.
Additional comment	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_2e/MWh
Description	Combined Margin Emission Factor of NEWNE Electricity Grid
Source of data	"CO_2 Baseline Database for Indian Power Sector", version 5 published by the Central Electricity Authority, Ministry of Power, Government of India. The "CO2 Baseline Database for Indian Power Sector" is available at www.cea.nic.in
Value(s) applied	In case of wind power projects default weights of 0.75 for $EF_{grid,OM,y}$ and 0.25for $EF_{grid,BM,y}$ are applicable as per ACM0002. Combined Margin Emission Factor ($EF_{grid,CM,y}$) = 0.92252
Purpose of data	Combined Margin Emission Factor has been calculated by the Central Electricity Authority in accordance with CDM methodologies: ACM0002, and Tool to Calculate the emission Factor for an Electricity System.
Additional comment	The value is calculated on ex-ante basis and it will remain same throughout the crediting period.

D.2. Data and parameters monitored

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

Data/Parameter	EG_y
Unit	MWh (Mega-watt hour)
Description	Net electricity supplied to the grid by the Project
Measured/Calculated /Default	Calculated
Source of data	Calculated using formula
Value(s) of monitored parameter	Annual electricity supplied to the grid by the Project (EG_y) = 67345.44102MWh
Monitoring equipment	The value is calculated, so there is no monitoring equipment.
Measuring/Reading/ Recording frequency	Monthly
Calculation method (if applicable)	$EG_y = \sum_{Project} E_{WEG,Export} - \sum_{Project} E_{WEG,Import}$
QA/QC procedures	QA/QC procedures will be as implemented by Discom pursuant to the provisions of the power purchase agreement and there will be no additional QA/QC procedures. Refer Annex – 4 for an illustration of the provisions for QA/QC procedures. The monitoring frequency of the data parameter will be on monthly basis.
Purpose of data	To calculate emission reduction.
Additional comment	The data will be archived for crediting period + 2 years.

Data/Parameter	$E_{JMR,Export}$
Unit	MWh (Mega-watt hour)
Description	Electricity exported, as recorded by the main meter at the utility substation.
Measured/Calculated /Default	Measured
Source of data	Export value from Joint meter reading taken at utility Substation in the presence of representatives of Enercon and state utility
Value(s) of monitored parameter	143269.244
Monitoring equipment	Energy Meter
Measuring/Reading/ Recording frequency	Monthly
Calculation method (if applicable)	Not Applicable
QA/QC procedures	The meters will be calibrated once each year by the state utility. Metering equipment is electronic tri-vector meter of 0.2% accuracy class (Details are mentioned in Annex I). The monitoring frequency of the data parameter will be on monthly basis.
Purpose of data	To calculate net electricity exported to grid.
Additional comment	The data will be archived for crediting period + 2 years.

Data/Parameter	$E_{JMR,Import}$
Unit	MWh (Mega-watt hour)
Description	Electricity imported, as recorded by the main meter at the utility substation.
Measured/Calculated /Default	Measured
Source of data	Import value from Joint meter reading taken at utility Substation in the presence of representatives of Enercon and state utility
Value(s) of monitored parameter	144.000
Monitoring equipment	Energy Meter
Measuring/Reading/ Recording frequency	Monthly
Calculation method (if applicable)	Not Applicable
QA/QC procedures	The meters will be calibrated once each year by the state utility. Metering equipment is electronic tri-vector meter of 0.2% accuracy class (Details are mentioned in Annex I). The monitoring frequency of the data parameter will be on monthly basis.
Purpose of data	To calculate net electricity exported to grid.
Additional comment	The data will be archived for crediting period + 2 years.

Data/Parameter	$E_{Controller,Export}$
Unit	MWh (Mega-watt hour)
Description	Electricity exported by a WEC, as measured at the controller (LCS).
Measured/Calculated /Default	Measured
Source of data	This reading is monitored continuously by the online monitoring station at the project site. This reading can also be seen in the electronic panel installed inside the WEC tower.
Value(s) of monitored parameter	145606.651
Monitoring equipment	LCS Meter
Measuring/Reading/ Recording frequency	Monthly
Calculation method (if applicable)	Not Applicable
QA/QC procedures	The energy generated is continuously monitored through centralised monitoring system (SCADA system). This value can also be checked from the electronic panel installed inside the WEC tower.
Purpose of data	To calculate net electricity exported to grid.
Additional comment	The data will be archived for crediting period + 2 years.

Data/Parameter	$E_{WEC,Export}$
Unit	MWh (Mega-watt hour)
Description	Electricity exported by a WEC to the grid.
Measured/Calculated /Default	Calculated
Source of data	Calculated using formula
Value(s) of monitored parameter	143269.244
Monitoring equipment	Not Applicable
Measuring/Reading/ Recording frequency	Monthly
Calculation method (if applicable)	$E_{WEG,Export}$ = Export Multiplication factor X $E_{Controller, Export}$
QA/QC procedures	This value is calculated. The monitoring frequency of the data parameter will be on monthly basis.
Purpose of data	To calculate net electricity exported to grid.
Additional comment	The data will be archived for crediting period + 2 years.

Data/Parameter	$E_{WEC,Import}$
Unit	MWh (Mega-watt hour)
Description	Electricity imported by a WEC to the grid.
Measured/Calculated /Default	Calculated
Source of data	Calculated using formula
Value(s) of monitored parameter	144.000
Monitoring equipment	Not Applicable
Measuring/Reading/ Recording frequency	Monthly
Calculation method (if applicable)	$E_{WEG,Import}$ = Import Multiplication factor X $E_{Controller, Export}$
QA/QC procedures	This value is calculated. The monitoring frequency of the data parameter will be on monthly basis.
Purpose of data	To calculate net electricity exported to grid.
Additional comment	The data will be archived for crediting period + 2 years.

Data/Parameter	$\sum_{Project} E_{WEG,Export}$
Unit	MWh (Mega-watt hour)
Description	Summation of electricity exported to the grid by all the WECs (63 machines) included in the project activity.
Measured/Calculated /Default	Calculated
Source of data	Calculated
Value(s) of monitored parameter	67418.98371
Monitoring equipment	Not Applicable
Measuring/Reading/ Recording frequency	Monthly
Calculation method (if applicable)	Summation of data values of $E_{WEG,Export}$ for all the WECs included in the project activity.
QA/QC procedures	The value is calculated and can be cross checked from the invoices raised on the state utility. The monitoring frequency of the data parameter will be on monthly basis.
Purpose of data	To calculate net electricity exported to grid.
Additional comment	The data will be archived for crediting period + 2 years.

Data/Parameter	$\sum_{Project} E_{WEG,Import}$
Unit	MWh (Mega-watt hour)
Description	Summation of electricity exported to the grid by all the WECs (63 machines) included in the project activity.
Measured/Calculated /Default	Calculated
Source of data	Calculated
Value(s) of monitored parameter	73.54269
Monitoring equipment	Not Applicable
Measuring/Reading/ Recording frequency	Monthly
Calculation method (if applicable)	Summation of data values of $E_{WEG,Import}$ for all the WECs included in the project activity.
QA/QC procedures	The value is calculated and can be cross checked from the invoices raised on the state utility. The monitoring frequency of the data parameter will be on monthly basis.
Purpose of data	To calculate net electricity exported to grid.
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 emissions are to be calculated as follows:

$BE_y = EG_{PJ, y} * EF_{grid, CM, y}$

Where:

BE_y = Baseline emissions in year y (tCO_2/yr)

$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)

$EF_{grid,CM,y}$ = Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (tCO_2/MWh)

Baseline Emission for the period (01/10/2011 to 30/06/2012)
= 67345.44102 (MWh) * 0.92252 (tCO2/MWh)
= 62122 tCO2

Month	Net Export	Emission Factor	CER
Oct-11	4774799.95	0.92252	4404
Nov-11	2441318.10	0.92252	2252
Dec-11	4833678.03	0.92252	4459
Jan-12	4755499.16	0.92252	4387
Feb-12	5846760.61	0.92252	5393
Mar-12	7081521.63	0.92252	6532
Apr-12	6748760.88	0.92252	6225
May-12	10446204.85	0.92252	9636
Jun-12	20416897.82	0.92252	18834
Total	67345441.02		62122

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 12.1.0)

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_2e)	Project emissions or actual net GHG removals by sinks (tCO_{2e})	Leakage (tCO_2e)	Emission reductions or net anthropogenic GHG removals by sinks (tCO_2e)
01/10/2011 – 31/12/2011	**11,115**	**0**	**0**	**11,115**
01/01/2012 – 30/06/2012	**51,007**	**0**	**0**	**51,007**
Total	**62,122**	**0**	**0**	**62,122**

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_2e)	87,159	62,122

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

>>

The emission reduction has been calculated for 9 months under the present monitoring period, while in registered PDD the Emission Reductions are calculated for a year (12 months). Proportionate number of CERs for a period of nine months as per registered PDD comes out to be 65,369. However, actual number of CERs achieved in the present monitoring period is 62,122. This reflects a difference of 4.9% on the downside, which is due to the low PLF achieved by the project activity.

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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		

ANNEX I

Metering system details:

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

S. No.	WEG S.C. NO	No. & Capacity	Make	Serial No.	Calibration date
1	2	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
2	3	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
3	4	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
4	5	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
5	6	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
6	7	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
7	8	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
8	9	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
9	10	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
10	13	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
11	14	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
12	15	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
13	16	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
14	17	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
15	23	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
16	24	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
17	25	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
18	29	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
19	30	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
20	32	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012

21	33	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
22	38	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
23	39	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
24	40	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
25	72	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
26	79	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
27	80	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
28	87	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
29	88	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
30	93	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
31	99	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
32	101	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
33	102	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
34	103	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
35	106	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
36	107	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
37	110	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
38	114	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
39	115	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
40	117	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
41	118	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
42	123	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
43	124	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
44	125	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
45	144	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
46	148	1 X 800 kW	L & T	11068549	04/03/2011

					20/03/2012
47	150	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
48	151	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
49	152	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
50	157	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
51	158	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
52	159	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
53	503	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
54	504	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
55	505	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
56	507	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
57	508	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
58	512	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
59	513	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
60	514	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
61	520	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
62	521	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012
63	525	1 X 800 kW	L & T	11068549	04/03/2011 20/03/2012