Annex 34

GUIDELINES FOR COMPLETING THE MONITORING REPORT FORM (CDM-MR)

(Version 01)

PART I (General guidance)

General Information on the CDM Monitoring Report Form (CDM − MR)

1. These guidelines seek to assist project participants in completing the Monitoring Report Form (CDM − MR).

2. If the project participants wish to submit a project activity for verification and issuance, they shall submit a fully completed CDM − MR.

3. The CDM − MR may be obtained electronically from the UNFCCC CDM website.

4. The CDM-Executive Board (the Board) may revise the CDM − MR.

5. Revisions will come into effect once adopted by the Board, making allowance of guideline 6 below.

6. Revisions to the CDM-MR do not affect monitoring reports for project activities that have already been submitted for the process of requesting issuance prior to the adoption of the revised CDM-MR.

7. In accordance with the CDM modalities and procedures, the CDM-MR shall be completed in English as the working language of the Board.

8. The CDM-MR template shall not be altered, that is, the form shall be completed using the same font without modifying the font and size, and document headings, or logo.

9. Tables and their columns shall not be modified or deleted. However, rows may be added as needed.

10. If a section of the CDM-MR is not applicable, it shall be explicitly stated that the section is left blank on purpose.

11. The presentation of values in the CDM-MR, including those used for the calculation of emission reductions, should be in international standard format, e.g. 1,000 representing one thousand and 1.0 representing one. The units used for weights should be accompanied by their equivalent in the international system of units (SI) units and norms (e.g. thousand, million) as part of the requirement to ensure transparency and clarity.

12. The presentation of values in the CDM-MR, including those used for the calculation of emission reductions, must be in the international system of units. Large numbers should be presented using the short scale naming system e.g. million = 10^6 and billion =10^9.

PART II (Monitoring Report Form)

Monitoring Report Form (CDM-MR)

1. The CDM-MR presents the essential information regarding the implemented project activity.

2. The CDM-MR should contain information on the following:
   (i) status of the implementation of the project activity,
   (ii) actual operation of the project activity,
   (iii) approved monitoring plan applied to the project activity,
   (iv) monitoring procedures,
   (v) baseline emissions,
   (vi) project emissions,
   (vii) leakage emissions, and
   (viii) emission reductions achieved during the monitoring period (including monitored parameters and calculation methods).

3. Project participants shall submit the completed version of the CDM-MR, together with the attachments, to a designated operational entity for verification of the project activity for the relevant monitoring period.

MONITORING REPORT FORM (CDM-MR)
Version 01 - in effect as of: DD/MM/YYYY

CONTENTS

MONITORING REPORT
Version number: 01
Dated: 12/08/2010

15 MW grid-connected wind power project by MMTC in Karnataka
Reference number: 1797

Monitoring Period: First Monitoring (20/02/2009 to 31/03/2010)

SECTION A. General description of the project activity

A.1. Brief description of the project activity:

>>

Purpose of the project activity and the measures taken to reduce greenhouse gas emissions: The main purpose of the project activity is to generate electrical energy through sustainable means using wind power resources, to utilize the generated output for selling it to the State Electricity Board i.e. Hubli Electricity Supply Company (HESCOM) for meeting the energy shortages in the state and to contribute to climate change mitigation efforts. Apart from generation of renewable electricity, the project has also been conceived for the following:

- To enhance the propagation of wind turbines in the region
- To contribute to the sustainable development of the region, socially, environmentally and economically
- To reduce the prevalent regulatory risks for this wind park through revenues from the CDM

Brief description of the installed technology and equipments: The proposed wind based power generation is a small scale project activity with an installed capacity of 15 MW (0.6 MW X 25) at Gajendragad site, Gadag district, Karnataka, India. The technology envisaged for this project is 0.6 MW Wind Energy Generators (WEG) developed by Vestas RRB India Ltd.

Relevant dates for the project activity: The important dates related to the project activity are listed in Table1 below.

Table 1: Relevant fate for the project activity

S.NO	ACTIVITY	DATE
1.	Project Start[1]	15-12-2006
2.	Project commissioning[2]	24-03-2007
3.	Completion[3]	31-03-2007

[1] Date of acceptance from VESTAS RRB.

[2] Commissioning date of first turbine.

[3] Commissioning of the complete project activity of 25 turbines with 600 kW each.

Total emission reductions achieved in this monitoring period: Based on the actual electricity generation data, the emission reduction as calculated are mentioned in Table 2 below.

Table 2: Emission reduction over the monitoring period

MONITORING PERIOD	EMISSION REDUCTION (TCO_2E)
20/02/2009 to 31/03/2010	23594

A.2. Project Participants

NAME OF PARTY INVOLVED (*) ((host) indicates a host party)	PRIVATE AND/OR PUBLIC ENTITY (IES) PROJECT PARTICIPANTS (*) (AS APPLICABLE)	KINDLY INDICATE IF THE PARTY INVOLVED WISHES TO BE CONSIDERED AS PROJECT PARTICIPANT (YES/NO)
India (Host Country)	MMTC Limited	No
(*) In accordance with the CDM modalities and procedures, at the time of making the CDM-PDD public at the stage of validation, a Party involved may or may not have provided its approval. At the time of requesting registration, the approval by the party (ies) involved is required.		
Note: *When the PDD is filled in support of a proposed new methodology (forms CDM-NBM and CDM-NMM),* at least the host Party (ies) and any known project participant (e.g. those proposing a new methodology) shall be identified.		

A.3. Location of the project activity:

The location for the project activity is:

State: Karnataka
District: Gadag
Taluk: Rona
Site: Gajendragarh

The location details of the individual WTG part of the project activity are furnished in Table 3 below.

Table 3: Location details of the WEGs

DISTRICT	TALUK	VILLAGE	WEG NO.	CAPACITY	SURVEY NO.
Gadag	Rona	Gowdagere	45	600 kW	5/1A
Gadag	Rona	Unachagere	21	600 kW	96/1
Gadag	Rona	Unachagere	44	600 kW	70/2

Gadag	Rona	Unachagere	29	600 kW	71/1
Gadag	Rona	Unachagere	37	600 kW	71/1.
Gadag	Rona	Vadegola	20	600 kW	21
Gadag	Rona	Vadegola	27	600 kW	21
Gadag	Rona	Vadegola	28	600 kW	21
Gadag	Rona	Vadegola	10	600 kW	42
Gadag	Rona	Vadegola	16	600 kW	42
Gadag	Rona	Rajur	6	600 kW	57
Gadag	Rona	Rajur	15	600 kW	106
Gadag	Rona	Rajur	24	600 kW	106
Gadag	Rona	Unachagere	9	600 kW	69/1, 106
Gadag	Rona	Unachagere	13	600 kW	69/1, 106
Gadag	Rona	Unachagere	14	600 kW	69/1, 106
Gadag	Rona	Unachagere	34	600 kW	69/1, 106
Gadag	Rona	Unachagere	22	600 kW	69/1, 106
Gadag	Rona	Unachagere	49	600 kW	69/1, 106
Gadag	Rona	Unachagere	23	600 kW	70/2
Gadag	Rona	Rajur	30	600 kW	106
Gadag	Rona	Kuntaji	40	600 kW	34/1
Gadag	Rona	Kuntaji	41	600 kW	34/1
Gadag	Rona	Kuntaji	42	600 kW	34/1
Gadag	Rona	Kuntaji	48	600 kW	34/1

The GPS co-ordinates for the individual WTG part of the project activity are furnished in Table 4 below.

Table 4: Latitude and Longitude details of the WEG's

WTG NO.	LATITUDE	LONGITUDE
6	15°45'28.854"	75°58'14.809"
9	15°44'36.670"	75°58'11'418"
10	15°45'16.523"	75°58'21'165"
13	15°44'40.872"	75°58'18'541"
14	15°44'45.737"	75°58'24.117"
15	15°44'43.085"	75°58'52.276"
16	15°45'16.503"	75°58'30.815"
20	15°45'47.037"	75°58'52.735"
23	15°44'51.830"	75°58'42.825"
24	15°45'02.667"	75°58'36.685"
27	15°45'32.924"	75°58'58.161"
28	15°45'38.967"	75°59'03.344"
29	15°44'45.005"	75°59'05.965"
30	15°44'58.377"	75°59'00.447"
40	15°45'07.561"	75°59'36.592"
41	15°45'17.542"	75°59'38.939"
42	15°45'21.146"	75°59'47.512"

45	15°44'42.271"	75°59'32.618"
34	15°44'34.673"	75°58'06.140"
49	15°44'43.085"	75°58'52.276"
21	15°44'34.530"	75°58'34.719"
22	15°44'48.384"	75°58'34.326"
37	15°45'25.005"	75°59'11.456"
48	15°45'28.854"	75°00'13.036"
44	15°45'28.854"	75°58'24.362"

A.4. Technical description of the project

Technology

In wind energy generation, kinetic energy of wind is converted into mechanical energy and subsequently into electrical energy. Wind blowing at high speeds has a considerable amount of kinetic energy. When this kinetic energy passes through the blades of the wind turbines, it is converted into mechanical energy and rotates the wind blades. When the wind blades rotate, the connected generator also rotates, thereby producing electricity. The technology is a clean technology since there are no GHG emissions associated with the electricity generation. The figure below shows a schematic diagram of a WEG. The present project installs 25 Vestas – make WEGs of individual capacity 0.6MW.

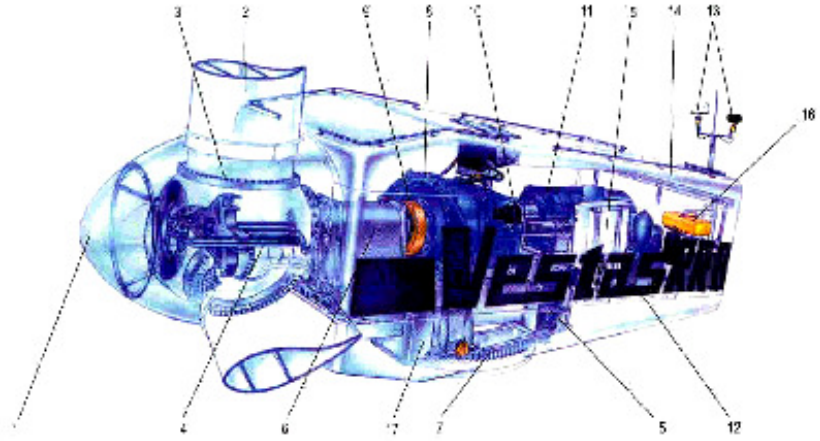


Figure 1: Outlay design of WTG

Structure of Machinery

The various machinery partsare as follows:

1. Nose Cone

2. Rotor Blades
3. Blade Bearing
4. Traverse Connecting Rod
5. Yaw Gear
6. Shaft Arrangement
7. Yaw Top
8. Gear Box
9. Shrink Disc
10. Transmission Shaft
11. Generator
12. Hydraulic Unit
13. Windvane & Anemometer
14. Nacelle Cover
15. VMP Top Control Unit
16. Mini Crane (for 500KW, 600KW only)
17. Nacelle Frame

Table 5: Salient features of the WEGs

1. BASED ON STURDY AND PROVEN DESIGN. 2. SPECIALLY SUITED FOR INDIAN CLIMATIC CONDITIONS. 3. HIGHLY RELIABLE COMPONENTS ENSURING LIFE TIME TROUBLE FREE OPERATION. 4. PITCH REGULATED ROTOR BLADES FOR HIGH PERFORMANCE AND FOR HIGHLY EFFECTIVE START AND BRAKE. 5. INTEGRATED POWER TRANSMISSION MECHANISM. 6. CAREFULLY DESIGNED ELECTRICAL SYSTEM TO WITHSTAND ERRATIC GRID CONDITIONS. 7. MICROPROCESSOR BASED FULLY AUTOMATIC CONTROL SYSTEM. 8. ASSURED QUALITY.

The technical details of the machinery used are detailed in Table 6 below:

Table 6: Technical details of the WEGs

PARAMETERS	DETAILS
Cut in wind speed	4 m/s
Cut out wind speed	25m/s
Survival wind speed	70 m/s
Tip Speed	64 m/s
Rotor Speed	26.2 rpm
Hub height	50 m
Nacelle tilt angle	5 degree
Regulation	Pitch
Voltage	690 V
Frequency (Hz)	50 Hz
Rated output	600 kW
Make of WEG	Pawan Shakthi
Gear Box	
Type	Planetary/Helical
Gear Ratio	1:58.2
No. of steps	3
Generator	
Rated power output	600 kW
Type (Dual wound/2 generators)	Asynchronous Single
Voltage	690 V
Revolutions	1527 rpm
Frequency	50 Hz
Tower	
Type	Lattice
Height	50 m
Material	Steel
Sections	6
Surface treatment	Hot dip galvanised (150 Microns)
Rotor	
No. of Blades	3
Diameter	47m
Swept Area	1735 m^2
Brake System	
Aerodynamics	Full feathering blade
Mechanical	Disc Brake
Yaw system	Slowing system with gear motors yawing
Nacelle cover	Fiberglass Reinforced polyester

Power regulation	Pitch regulated
Controls	Microprocessor based

A.5. Title, reference and version of the baseline and monitoring methodology applied to the project activity:

Table 7: Methodological details

METHODOLOGY APPLICABLE	AMS. I.D.
Project Type	Renewable Energy Project
Project Cateogry	Grid connected renewable electricity generation
Version	11
Sectoral scope	01
Dated	Effective from 18th May 2007
Reference	http://cdm.unfccc.int/methodologies/PAmethodologies/approved.html

A.6. Registration date of the project activity:

20/02/2009[4]

A.7. Crediting period of the project activity and related information (start date and choice of crediting period):

Crediting Period Start Date: 20/02/2009

Crediting Period: Fixed, 10 years 0 Months

A.8. Name of responsible person(s)/entity(ies):

Date of completing the Monitoring Report: 12/08/2010

Contact:

Senergy Global Private Limited (Not a Project Participant)

Ph. No.: +91 9999 437 123

[4] http://cdm.unfccc.int/Projects/DB/RWTUV1207728922.94/view; Reference Number 1797

SECTION B. Implementation of the project activity

B.1. Implementation status of the project activity

The commissioning dates for the 25 WTGS of 600 kW capacity each are listed in the table below:

Table 8: Details of commissioning of the WEGs

WEG NO.	LOCATION	DATE OF COMMISSIONING
40	Kuntaji	24/03/2007
41	Kuntaji	24/03/2007
42	Kuntaji	24/03/2007
48	Kuntaji	24/03/2007
21	Unachagere	30/03/2007
44	Unachagere	30/03/2007
29	Unachagere	30/03/2007
37	Unachagere	30/03/2007
9	Unachagere	24/03/2007
13	Unachagere	24/03/2007
14	Unachagere	24/03/2007
34	Unachagere	24/03/2007
22	Unachagere	24/03/2007
49	Unachagere	24/03/2007
23	Unachagere	24/03/2007
20	Vadegola	24/03/2007
27	Vadegola	24/03/2007
28	Vadegola	24/03/2007
10	Vadegola	24/03/2007
16	Vadegola	24/03/2007
6	Rajur	24/03/2007
15	Rajur	24/03/2007
24	Rajur	24/03/2007
30	Rajur	24/03/2007
45	Gowdagere	30/03/2007

The operators record monthly energy output of each WEG and prepare reports on the performance of wind farm indicating turbine wise production. Till date the WEGs have been operating smoothly and there have been no case reported for downtimes or exchange of equipments.

No adverse event took place during the monitoring period which would have impacted the applicability of the methodology used in the project activity.

B.2. Revision of the monitoring plan

The monitoring plan has not been revised.

B.3. Request for deviation applied to this monitoring period

This is the first monitoring period and no deviation has been applied to this monitoring period.

B.4. Notification or request of approval of changes

There have been no changes in the project activity and the scenario is same as depicted in the registered CDM PDD, Reference no. 1797.

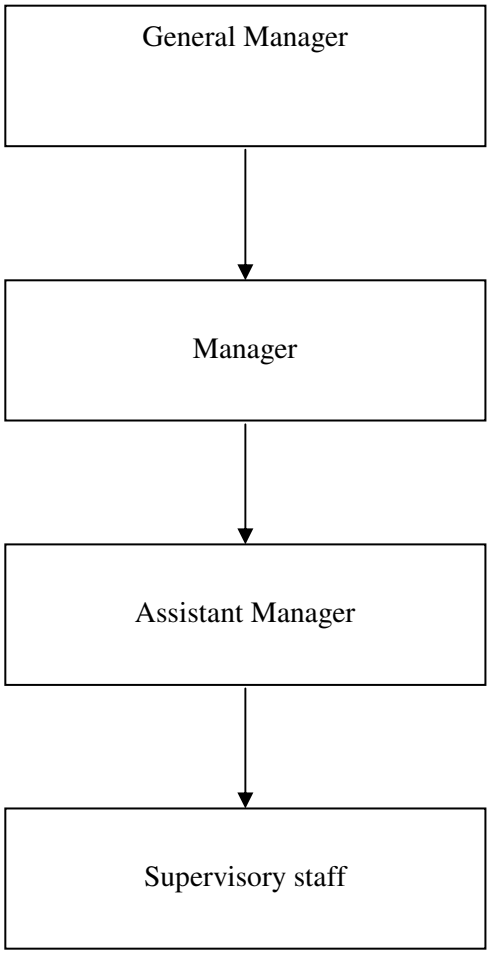
SECTION C. Description of the monitoring system

Monitoring Plan:

For the purpose of monitoring, the project participant has entered into an operation and maintenance agreement with the supplier of the machines Vestas RRB India Ltd. for a period of twenty years from the date of commissioning. Training of engineers of MMTC at site and two engineers at works where assembly and testing of complete WEG are carried out has been done by the Vestas RRB India Ltd. (the Contractor); the training course is carried out at site.

RRB Vestas has a separate service department headed by Vice President supported by General Managers, Managers, and Assistant Managers and Supervisory Staff. Assistant Managers are posted at the project site along with requisite numbers of supervisory staff for carrying out operation and maintenance. The supervisory staff and maintenance are provided in adequate number for maintaining adequate strength at all the time. The operation and maintenance structure with respect to the implementation of the project has been given below. The operators also record monthly energy output of each WEG and prepare reports on the performance of wind farm indicating turbine wise production. The contractor shall draw the preventive maintenance schedules and attend to the breakdowns keeping in view that machine availability would be minimum 95%.

Operational & Maintenance Structure



Monitoring System

There are three metering points for each WEG in the project. The first being at the Controller end, completely controlled and maintained by the RRB Vestas. The WEGs are then connected to the Main Receiving Stations (MRS) managed by HESCOM. All the WEGs for the project have been specifically identified to avoid any confusion regarding the generation by each WEG. The MRS (1&2) is then connected to the Main meter at the nearest Substation handled by KPTCL. In case, more than one project WEG's are jointly metered at the Main meter, the electricity generated is apportioned on the basis of the readings at the MRS. A check meter is also provided at the Substation as a back up for any fault in the Main meter.

Calibration of Meters

The meters both at Substation and MRS is carried out on annual basis and in case of faulty meters, corrective action would be taken immediately.

Mode of Archiving

The data would be collected regularly by project proponent an archived in both electronic and paper for minimum of two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.

SECTION D. Data and parameters

This section shall include parameters used to calculate baseline, project, and leakage emissions as well as other relevant parameters required by the approved methodology and the monitoring plan; and specific information on how data and parameters have been monitored during the monitoring period. Data that is determined only once for the crediting period but are used after registration of the project activity should be included here under section D.1.

Provide for each parameter the following information, using the tables provided below:

1. Value of monitored parameter in the period for the purpose of calculating emission reductions. To report multiple values, a table may be used and included in this monitoring report or include references to spreadsheet. For default value (such as an IPCC value), where it is ex-post confirmed, the most recent value shall be applied.
2. Description of the equipment used to monitor each parameter, including details on accuracy class, and calibration information (frequency, date of calibration and validity), if applicable as per monitoring plan.
3. Measuring and recording method: how the parameters are measured/calculated, specifying the measurement and recording frequency.
4. Source of data: logbooks, daily records, surveys, etc.
5. Where relevant, the calculation method of the parameter.
6. The QA/QC procedures applied (if applicable per monitoring plan).
7. Include information about appropriate emission factors, IPCC default values and any other reference values that have been used in the calculation of emission reductions.

D.1. Data and parameters determined at registration and not monitored during the monitoring period, including default values and factors	
(Copy this table for each data and parameter. To report multiple values, a table may be used)	
Data / Parameter:	**NA**
Data unit:	
Description:	
Source of data used:	
Value(s) :	
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	
Additional comment:	

D.2. Data and parameters monitored
(Copy this table for each data and parameter. To report multiple values, a table may be used)

<table>
<tr><td>Data / Parameter:</td><td>EGy</td></tr>
<tr><td>Data unit:</td><td>MWh</td></tr>
<tr><td>Description:</td><td>Net Electricity supplied to the grid by the WEG project in year y</td></tr>
<tr><td>Measured /Calculated /Default:</td><td>Measured by the meters installed at the site</td></tr>
<tr><td>Source of data:</td><td>JMR Sheets/measurement records of the EPC (Engineering, Procurement, and Construction) contractor.</td></tr>
<tr><td>Value(s) of monitored parameter:</td><td>28706.44</td></tr>
<tr><td>Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)</td><td>Baseline emission</td></tr>
<tr><td>Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)</td><td>
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<tr><th>RR. NO.</th><th>MAIN METER</th><th>CHECK METER</th></tr>
<tr><td>62</td><td>06767614</td><td>06760800</td></tr>
<tr><td>63</td><td>06767630</td><td>06606812</td></tr>
<tr><td>64</td><td>06606810</td><td>06767623</td></tr>
<tr><td>75</td><td>07002560</td><td>06760792</td></tr>
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Accuracy class of meters: 0.2
Calibration Frequency: Annually
<table>
<tr><th rowspan="2">RR. NO.</th><th colspan="2">LAST CALIBRATION DATE</th></tr>
<tr><th>Main Meter</th><th>Check Meter</th></tr>
<tr><td>62</td><td>06-06-2010</td><td>06-06-2010</td></tr>
<tr><td>63</td><td>06-06-2010</td><td>06-06-2010</td></tr>
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<tr><td>75</td><td>06-06-2010</td><td>06-06-2010</td></tr>
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</td></tr>
<tr><td>Measuring/ Reading/ Recording frequency:</td><td>The data is measured hourly and recorded monthly</td></tr>
<tr><td>Calculation method (if applicable):</td><td>-</td></tr>
<tr><td>QA/QC procedures applied:</td><td>The electricity meters record both export and import of electricity from the WEGs and the net electricity generated will be used for calculation of Emission reductions. The two meters (main and check) would be checked for accuracy and calibrated annually.</td></tr>
</table>

Data / Parameter:	**EGy(import)**
Data unit:	**MWh**
Description:	Electricity imported by the project in year *y*
Measured /Calculated /Default:	Measured by the meters installed at the site

<table>
<tr><td>Source of data:</td><td>JMR Sheets/measurement records of the EPC (Engineering, Procurement, and Construction) contractor.</td></tr>
<tr><td>Value(s) of monitored parameter:</td><td>130.72</td></tr>
<tr><td>Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)</td><td>Baseline emissions</td></tr>
<tr><td>Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)</td><td>
<table>
<tr><th>RR. NO.</th><th>MAIN METER</th><th>CHECK METER</th></tr>
<tr><td>62</td><td>06767614</td><td>06760800</td></tr>
<tr><td>63</td><td>06767630</td><td>06606812</td></tr>
<tr><td>64</td><td>06606810</td><td>06767623</td></tr>
<tr><td>75</td><td>07002560</td><td>06760792</td></tr>
</table>
Accuracy class of meters: 0.2
Calibration Frequency: Annually
<table>
<tr><th rowspan="2">RR. NO.</th><th colspan="2">LAST CALIBRATION DATE</th></tr>
<tr><th>Main Meter</th><th>Check Meter</th></tr>
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<tr><td>Measuring/ Reading/ Recording frequency:</td><td>The data is measured hourly and recorded monthly</td></tr>
<tr><td>Calculation method (if applicable):</td><td>-</td></tr>
<tr><td>QA/QC procedures applied:</td><td>The two meters (main and check) would be checked for accuracy and calibrated annually</td></tr>
</table>

Data / Parameter:	**EGy (export)**
Data unit:	MWh
Description:	Electricity exported by the project in year y
Measured /Calculated /Default:	Measured by the meters installed at the site
Source of data:	JMR Sheets/measurement records of the EPC (Engineering, Procurement, and Construction) contractor.
Value(s) of monitored parameter:	28706.44
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Baseline emission

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<tr><td>64</td><td>06606810</td><td>06767623</td></tr>
<tr><td>75</td><td>07002560</td><td>06760792</td></tr>
</table>
Accuracy class of meters: 0.2
Calibration Frequency: Annually
<table>
<tr><th rowspan="2">RR. NO.</th><th colspan="2">LAST CALIBRATION DATE</th></tr>
<tr><th>Main Meter</th><th>Check Meter</th></tr>
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<tr><td>63</td><td>06-06-2010</td><td>06-06-2010</td></tr>
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</table>
</td></tr>
<tr><td>Measuring/ Reading/ Recording frequency:</td><td>The data is measured hourly and recorded monthly</td></tr>
<tr><td>Calculation method (if applicable):</td><td>-</td></tr>
<tr><td>QA/QC procedures applied:</td><td>The two meters (main and check) would be checked for accuracy and calibrated annually.</td></tr>
</table>

Data / Parameter:	**EFy**
Data unit:	tCO_2/MWh
Description:	Emission factor of the existing generation mix for Southern Grid
Measured /Calculated /Default:	Calculated based on the data from the CEA database
Source of data:	CEA : 'The CO2 Baseline Database for the Indian Power Sector': http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm
Value(s) of monitored parameter:	0.8219
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Baseline emissions
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	The methods for measuring EFy can be found in the User Guide for The CO2 Baseline Database for the Indian Power Sector by CEA.
Measuring/ Reading/ Recording frequency:	Annually during the time of calculation of the emission reduction units.

Calculation method (if applicable):	-
QA/QC procedures applied:	The data for the EFy would be calculated by the Central Electricity Authority of India every year. Thus, the data would reflect the updated existing generation mix for the southern grid and used ex-post. The conservative of the weighted average and the combined margin would be taken as emission factor.

SECTION E. Emission reductions calculation

E.1. Baseline emissions calculation

BEy = EGy. EF y ----------(1)

Where,

EGy = Net electricity supplied to the grid by the project in the year y
EFy = Weighted Average Emission Rate in the year y

Monitored Data:

1. **RR No.:** 62
   Number of WEGs: 8
   Capacity: 600 kW each
   Meter Serial Number: 06767614

MONTH / YEAR	BILLING PERIOD		UNITS EXPORTED (MWH)	TRANSMISSION LOSS (MWH)	UNITS IMPORTED (MWH)	MONTHLY DISPATCH TO GRID (MWH)
	Initial reading	Final reading				
Feb-09	01.02.09	01.03.09	128.4525	0.86	1.27	126.13
Mar-09	01.03.09	01.04.09	330.99	3.21	5.94	320.954
Apr-09	01.04.09	01.05.09	372.24	2.57	4.29	364.7325
May-09	01.05.09	01.06.09	730.62	3.94	2.64	723.644
Jun-09	01.06.09	01.07.09	757.68	4.04	0.99	752.5005
Jul-09	01.07.09	01.08.09	1624.59	7.49	0.00	1617.096
Aug-09	01.08.09	01.09.09	880.44	4.34	1.65	874.1995
Sep-09	01.09.09	01.10.09	488.07	2.75	3.63	481.1495
Oct-09	01.10.09	01.11.09	551.76	3.38	3.63	544.2035
Nov-09	01.11.09	01.12.09	704.55	3.37	2.31	698.5195
Dec-09	01.12.09	01.01.10	833.58	3.88	1.65	827.8035

Jan-10	01.01.10	01.02.10	618.09	4.24	2.64	610.81
Feb-10	01.02.10	01.03.10	380.82	2.08	5.28	372.672
Mar-10	01.03.10	01.04.10	385.44	2.30	5.61	376.6865

2. RR No.: 63
Number of WEGs: 8
Capacity: 600 kW each
Meter Serial Number: 06767630

MONTH / YEAR	BILLING PERIOD		UNITS EXPORTED (MWH)	TRANSMISSION LOSS (MWH)	UNITS IMPORTED (MWH)	MONTHLY DISPATCH TO GRID (MWH)
	Initial reading	Final reading				
Feb-09	01.02.09	01.03.09	117.74	0.79	1.38	115.37
Mar-09	01.03.09	01.04.09	291.39	2.82	6.60	280.978
Apr-09	01.04.09	01.05.09	473.88	3.28	3.96	466.049
May-09	01.05.09	01.06.09	820.71	4.43	3.30	812.489
Jun-09	01.06.09	01.07.09	1036.86	5.53	0.99	1030.1905
Jul-09	01.07.09	01.08.09	2036.78	9.40	0.00	2027.384
Aug-09	01.08.09	01.09.09	1016.40	5.01	1.65	1009.4885
Sep-09	01.09.09	01.10.09	591.03	3.33	3.30	583.909
Oct-09	01.10.09	01.11.09	596.64	3.66	3.30	589.188
Nov-09	01.11.09	01.12.09	676.50	3.24	1.98	670.983
Dec-09	01.12.09	01.01.10	830.61	3.87	1.65	824.8465
Jan-10	01.01.10	01.02.10	583.44	4.01	2.64	576.398
Feb-10	01.02.10	01.03.10	369.60	2.02	5.61	361.1335
Mar-10	01.03.10	01.04.10	354.75	2.12	5.61	346.1795

3. RR No.: 64
Number of WEGs: 4
Capacity: 600 kW each
Meter Serial Number: 06606810

MONTH / YEAR	BILLING PERIOD		UNITS EXPORTED (MWH)	TRANSMISSION LOSS (MWH)	UNITS IMPORTED (MWH)	MONTHLY DISPATCH TO GRID (MWH)
	Initial reading	Final reading				

Feb-09	01.02.09	01.03.09	151.02	0.38	0.64	56.34
Mar-09	01.03.09	01.04.09	295.38	1.46	2.88	146.246
Apr-09	01.04.09	01.05.09	497.70	2.04	1.98	291.06
May-09	01.05.09	01.06.09	537.12	2.68	1.44	493.36
Jun-09	01.06.09	01.07.09	896.22	2.87	0.72	533.427
Jul-09	01.07.09	01.08.09	533.16	4.13	0.00	892.086
Aug-09	01.08.09	01.09.09	355.50	2.63	0.90	529.495
Sep-09	01.09.09	01.10.09	280.44	2.00	1.62	351.637
Oct-09	01.10.09	01.11.09	279.72	1.72	2.16	276.237
Nov-09	01.11.09	01.12.09	311.40	1.34	1.26	276.931
Dec-09	01.12.09	01.01.10	194.04	1.45	1.08	308.709
Jan-10	01.01.10	01.02.10	156.78	1.33	1.80	190.638
Feb-10	01.02.10	01.03.10	195.30	0.86	2.52	153.027
Mar-10	01.03.10	01.04.10	151.02	1.17	2.52	191.235

4. **RR No.:** 75
Number of WEGs: 5
Capacity: 600 kW each
Meter Serial Number: 07002560

MONTH / YEAR	BILLING PERIOD		UNITS EXPORTED (MWH)	TRANSMISSION LOSS (MWH)	UNITS IMPORTED (MWH)	MONTHLY DISPATCH TO GRID (MWH)
	Initial reading	Final reading				
Feb-09	01.02.09	01.03.09	83.72	0.26	0.87	82.46
Mar-09	01.03.09	01.04.09	231.12	0.83	3.24	226.567
Apr-09	01.04.09	01.05.09	252.36	0.89	2.70	248.368
May-09	01.05.09	01.06.09	448.74	2.42	1.80	444.25
Jun-09	01.06.09	01.07.09	548.10	2.92	0.72	544.348
Jul-09	01.07.09	01.08.09	1139.76	5.26	0.18	1134.295
Aug-09	01.08.09	01.09.09	519.30	2.56	0.90	515.703
Sep-09	01.09.09	01.10.09	319.32	1.80	2.16	315.039
Oct-09	01.10.09	01.11.09	357.66	2.19	2.34	352.777
Nov-09	01.11.09	01.12.09	444.06	2.13	1.44	440.277
Dec-09	01.12.09	01.01.10	480.24	2.24	1.08	476.763
Jan-10	01.01.10	01.02.10	352.08	2.42	1.80	347.593
Feb-10	01.02.10	01.03.10	237.24	1.29	3.06	232.428

Mar-10	01.03.10	01.04.10	275.04	1.64	3.42	269.464

Summary

RR.No.	Units Exported (MWh)	Transmission Losses (MWh)	Units Imported (MWh)	Total dispatch to grid (MWh)
62	8787.32	48.46	41.53	8691.10
63	9796.329	53.48186	41.96893	9694.583
64	4741.232	26.06379	21.51643	4690.424
75	5688.739	28.84043	25.70786	5630.335
Total	29013.62	156.84	130.73	28706.44

EGy = 28706.44 MWh

EFy = 0.8219 tCO_2/MWh

BEy = EGy X EFy

= (28706.44 X 0.8219) tCO_2e

= 23594.018 tCO_2e

= 23594 tCO_{2e}

E.2. Project emissions calculation

Project Emissions by sources of GHGs due to the project activity within the project boundary are zero since wind power is a GHG emission free source of energy.

PEy = 0 ----------**(2)**

E.3. Leakage calculation

Leakage is not applicable as the renewable energy technology used is not equipment transferred from another activity. Therefore, as per the simplified procedures for SSC project activities, no leakage calculation is required.

Ly = 0 ----------**(3)**

E.4. Emission reductions calculation / table

As per Equation 1 in section E.1,

ERy = BEy – PEy – Ly

= 23594 – 0 – 0

= 23594 tCO_2e

The emission reduction calculation is summarised below.

Table 9: Summary of the emission reduction

BASELINE EMISSIONS (TCO_2E)	PROJECT EMISSIONS (TCO_2E)	LEAKAGE (TCO_2E)	EMISSION REDUCTION (TCO_2E)
23594	0	0	23594

E.5. Comparison of actual emission reductions with estimates in the CDM-PDD

Item	Values applied in ex-ante calculation of the registered CDM-PDD	Actual values reached during the monitoring period
Emission reductions (tCO_2e)	**21927.71**	**23594**

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

The emission factor considered at the time of the registration of the project activity with UNFCCC was taken from CEA data, version 03. During this version, there were 5 separate grids namely, South, North, East, North-east and East. The emission factor used was for the Southern Grid was 0.7219 tCO_2/MWh.

The emission factor data was not considered ex-ante. Instead we choose an ex post value wherein whatever is the applicable value at date would be considered. Presently the distribution of the grid is into two namely, NEWNE and southern grid.

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