Monitoring report form (Version 03.2)

Monitoring report

Title of the project activity	Wind Power Project in Rajasthan, India by M/s Devki Builders Pvt. Ltd.
Reference number of the project activity	5923[1]
Version number of the monitoring report	01
Completion date of the monitoring report	21/01/2014
Registration date of the project activity	23/03/2012[2]
Monitoring period number and duration of this monitoring period	Monitoring Period : 01 Duration of Monitoring Period : 23/04/2012 to 04/12/2013 (first and last days included)
Project participant(s)	M/s Devki Builders Pvt. Ltd.
Host Party(ies)	India
Sectoral scope(s) and applied methodology(ies)	Sectoral scope(s) : 01 Applied Methodology(ies) : AMS I.D. Version 17
Estimated amount of GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period in the registered PDD	((583/365)*10240) = 16,356 tCO_2
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period	15,032 tCO_2
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period up to 31 December 2012(if applicable)	7,075 tCO_2
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period from 1 January 2013 onwards (if applicable).	7,957 tCO_2

[1] http://cdm.unfccc.int/Projects/projsearch.html
[2] http://cdm.unfccc.int/Projects/DB/SIRIM1332321083.17/view

SECTION A. Description of project activity

A.1. Purpose and general description of project activity

The main purpose of the project activity is to generate electricity using wind energy. The power thus generated would be supplied to the state electricity grid and replace the power generated by fossil fuel intensive thermal power plants thus mitigating GHG emissions.

The electricity generation from the project activity will contribute to GHG reductions of 102,400 tCO_2 over a period of 10 years, although the project life is envisaged as 20 years. The project activity can evacuate 111,002 MWh of renewable power annually to the power deficit NEWNE grid. In this first monitoring period, the project activity contributes to GHG reduction of 15,032 tCO_2 and evacuate 17,184 MWh electrical power to NEWNE grid.

Contribution of project activity to sustainable development:

Indian economy is highly dependent on "Coal" as fuel to generate energy and for production processes. Thermal power plants are the major consumers of coal in India and yet the basic electricity needs of a large section of population are not being met.

This results in excessive demands for electricity and places immense stress on the environment. Changing coal consumption patterns will require a multi-pronged strategy focusing on demand, reducing wastage of energy and the optimum use of Renewable Energy (RE) sources.

Brief description of the installed technology and equipment's:

The project activity consists of 4 wind electric generators (WEGs) installed within Jodhapur, Rajasthan. The project activity does not involve any technology transfer. The details of the windmill e.g. Unique identification no, Survey no, commissioning date, latitude, longitude are provided in table 1 of section A.2.The details description of technology is provided in section B of Monitoring Report.

A.2. Location of project activity

Host Party(ies) : India

Region/State/Province etc : Rajasthan

City/Town/Community etc : Village: Bastwa Mataji , Taluka: Dharampur, District: Jodhpur

Physical/ Geographical location :

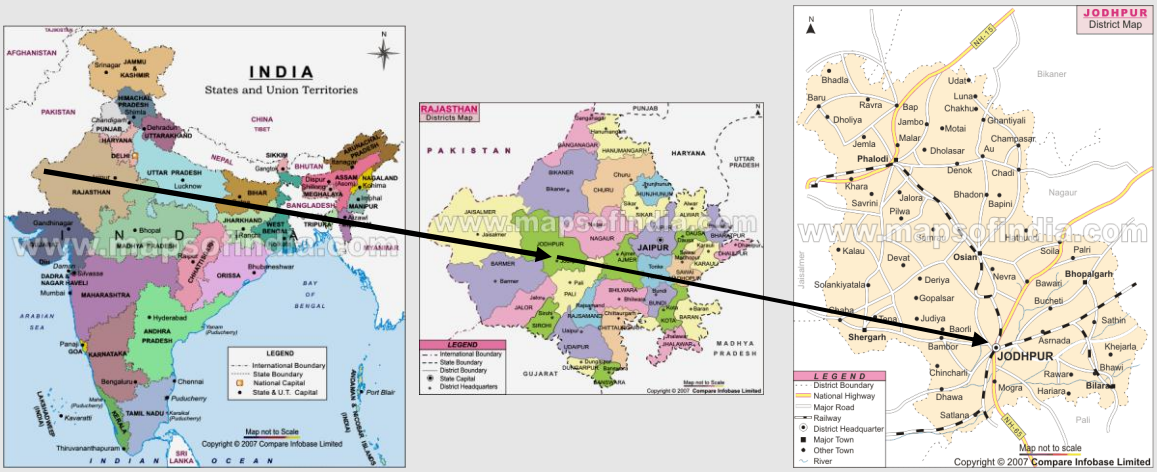
Detail of physical location including unique identification number :

Table-1: Location of Project Activity

Capacity	1.5 MW	1.5 MW	1.5 MW	1.5 MW
Model	S-82	S-82	S-82	S-82
Unique identification No.	RKBNL6	RKB083	RKB088	RKB089
Survey No.	RKB	RKB	RKB	RKB
Village	Kui India	Bastwa Mataji	Bastwa Mataji	Bastwa Mataji
Taluka	Shergarh	Shergarh	Shergarh	Shergarh
District	Jodhpur	Jodhpur	Jodhpur	Jodhpur
State	Rajasthan	Rajasthan	Rajasthan	Rajasthan
Commissioning Date	30/09/2009	30/09/2009	30/09/2009	30/09/2009
Lattitude	N26 27 38.5	N26 30 18.0	N26 31 23.7	N26 31 35.0
Longitude	E72 29 21.4	E72 33 53.2	E72 34 11.8	E72 34 05.4

Geographical Location:

Figure-1: Geographical location of WEG



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	Private entity - M/s Devki Builders Pvt. Ltd.	No

A.4. Reference of applied methodology

Type : I- Renewable energy projects

Category : I.D. – Grid connected renewable electricity generation

Version number : 17

Sectoral Scope : 01

Reference:
http://cdm.unfccc.int/filestorage/V/9/L/V9LRSXKP24Q7YT6HZDUBO3C0ING8AJ.1/EB61_repan17_Revisio AMS-I.D_ver17.pdf?t=bGZ8bHowc2ZofDD_zFkbK39cstg65YGRWUQK

Tool : Tool to calculate the emission factor for an electricity system (Version 2.0, EB 50, Annex 14)

A.5. Crediting period of project activity

Crediting period from 23/04/2012 to 22/04/2022 (Fixed)[3]

Choice of crediting period: Fixed for 10 years 0 Month

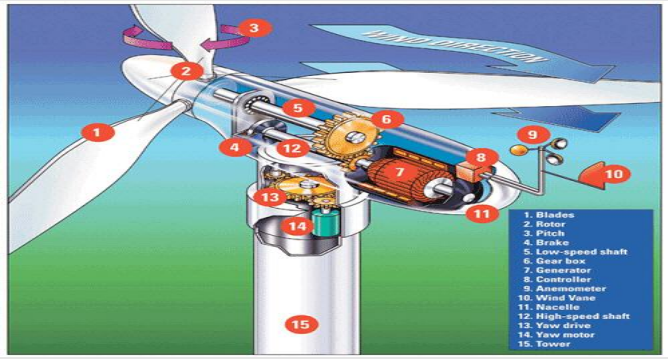
[3] http://cdm.unfccc.int/Projects/DB/RWTUV1229007791.61/view

SECTION B. Implementation of project activity

B.1. Description of implemented registered project activity

In wind energy generation, kinetic energy of wind is converted into mechanical energy and subsequently into electrical energy. Wind has considerable amount of kinetic energy when blowing at high speeds. This kinetic energy when it 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 produce electricity.

Figure-2: Details of WEG



The technology used in this project is safe, sound and a clean technology, since no greenhouse gas (GHG) emissions associated with the electricity generation. The project installs 4 no. (S-82) Suzlon make WEG of 1.5 MW capacity. Salient features of S-82 WEG are as follows

Table-2: Salient Features of 1.5 MW (S-82) WEG.

Sr. No.	Particulars	Specifications
1.	Rotor diameter	82 m
2.	Hub height	78 m
3.	Installed electrical output	1500 kW
4.	Cut-in wind speed	4.0 m/s
5.	Rated wind speed	12.0 m/s
6.	Cut-out wind speed	20 m/s
7.	Rotor swept area	5281 m^2
8.	Rotational speed	16.3 rpm
9.	Rotor material	GRP
10.	Power regulation	Independent electrochemical pitch
11.	Generator	Asynchronous Generator, 4 pole with slip ring
14.	Operating voltage	690 V
15.	Frequency	50 Hz
16.	Enclosure class	IP 54
17.	Insulation class	H
18.	Slip control	Unique Macro slip providing slip up to 16.7 %
19.	Gear box	3-stage gearbox, 1 planetary & 2 helical
20.	Gear ratio	1:95.09
21.	Nominal load	1650 kW
22.	Type of cooling	Oil cooling system, Forced lubrication
23.	Yaw drive system	Active electrical yaw motors
24.	Yaw bearing	Polyamide slide bearing
25.	Aerodynamic brake	3 independent system with blade pitching
26.	Mechanical brake	Hydraulic disc brake
27.	Design standards	GL special class

The detailed status of implementation i.e. capacity, model, unique identification no, survey no, village, Taluka, District, commissioning date, latitude, longitude are given in table no.1 of section A.2 "**Location of project activity"**.

B.2. Post registration changes

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

Not Applicable

B.2.2. Corrections

Not Applicable

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

Not Applicable

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

Not Applicable

B.2.5. Changes to start date of crediting period

Not Applicable

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

Not Applicable

SECTION C. Description of monitoring system

The methodology AMS – I.D. Version 17 titled "Grid connected renewable energy generation" requires monitoring of the following parameters:

For the project activity, to establish creditable emission reduction, it has to record the actual electricity supplied to the grid (i.e. the net electricity – $EG_{BL, y}$), which would displace equivalent units of electricity at the operating and build margin of the grid. Since the simple OM emission factor is calculated based on a 3 year average, based on the most recent statistics available at the time of PDD preparation, its updating based on post monitoring is not required.

For BM calculation, option 1 ('Tool to calculate the emission factor for an electricity system (Version 2.0, EB 50, Annex 14) has been chosen, which is calculated ex ante based on the most recent information, hence its monitoring is also not required. Thus, under the monitoring protocol for the said project, it is required to monitor and record only the net electricity supplied to the grid i.e $EG_{BL, y}$

- The proposed project activity requires evacuation facilities for sale to grid and the evacuation facility is essentially maintained by the state power utility (State Electricity Board).
- The electricity generation measurements are required by the utility and the investors to assess electricity sales revenue.
- The project activity has therefore envisaged two independent measurements of generated electricity from the wind turbines.
- The primary recording of the electricity fed to the state utility grid will be carried out jointly at the incoming feeder of the state power utility (State Electricity Board). Turbines for sale to utility will be connected to the feeder.
- The joint measurement will be carried out once in a month in presence of both parties (the developer's representative and officials of the state power utility). Both parties will sign the recorded reading.
- Metering equipment - Metering is carried out through electronic trivector meters of accuracy class 0.2% required for the project. The main meter and check meter shall be installed and owned by State Electricity Board. The metering equipments are maintained in accordance with electricity standards.

- Meter readings - The monthly meter readings (both main and check meters) at the project site and the receiving station shall be taken simultaneously and jointly by the parties on the particular day of the following month. At the conclusion of each meter reading an appointed representative of the State Electricity Board and the company signs a document indicating the number of kWh exported to the grid.

- The secondary monitoring, which will provide a backup (fail-safe measure) in case the primary monitoring is not carried out, would be done at the individual WEGs. Each WEG is equipped with an integrated electronic meter. These meters are connected to the Central Monitoring Station (CMS) of the entire wind farm through a wireless Radio Frequency (RF) network (SCADA). The generation data of individual machine can be monitored as a real-time entity at CMS.

- All the relevant data & reports for maintaining accuracy in future monitoring and reporting of GHGs emission reductions will be with the SUZLON on behalf of project participant, which follows Quality Management System (QMS) procedure as per ISO 9001 and is ISO certified organization. The ISO certificate is available for verification by DOE.

- The project participant signed an operation and maintenance agreement with the supplier of the wind turbines i.e. SUZLON. The agreement is for a period of 4 years. The performance of the turbines, safety in operation and scheduled /breakdown maintenances is responsibility of SUZLON and are organized and monitored by them. So the authority and responsibility of project management lies with the O & M contractor.

- ISO 9001:2000 standard has been adopted by SUZLON, who is responsible for monitoring, and O & M of the project. Training is an essential part of the ISO system. To comply with the ISO standard the training has to be provided to personnel according to their responsibility with in organization.

Operation and maintenance of wind farms

1. Operation and maintenance service team
   - Round the clock 365 days a year – operations management
   - Preventive maintenance of installed base of WEGs across India
   - Breakdown maintenance of installed base of WEGs across India
   - Execution of major & minor design changes in WEGs

2. Special task service team provide various services to sites
   - Relocations
   - Blade replacement at site
   - Major breakdown

3. HT operation & maintenance service team
   - Substation
   - HT lines – internal external

4. Facility service team
   - SCADA service
   - E-repair (Electronic components such as PCB)

5. Other service team
   - Customer support services – generation reporting
   - Liasioning with State Electricity Boards & Nodal agencies

The organizational hierarchy of SUZLON for O& M management is as follows –

Designation	Responsibilities
Project Head	▪ Overall performance monitoring ▪ Project execution
Project Executer and Controller	▪ Operation ▪ Verification of data ▪ Site visit to check authenticity of data and take corrective action, wherever necessary

	▪ Storage of data
Site Main Controller	▪ Operation, monitoring and verification of data ▪ Data recording ▪ Storage of data
Operation and Maintenance Contractor	▪ Operation and maintenance ▪ Data recording ▪ Storage of data

Apportioning Procedure:

Description of net electricity generation for individual WEG calculation/ proportioning procedure

Each substation is connected to a number of wind turbines. The generation reading is collectively displayed by the substation meter. The net generation of each of the wind turbines is then calculated in the following manner:

The generated electricity is measured through a two-step procedure wherein the first metering is carried out at the controller of the machine with on-board meter. The monitoring of all these wind turbines is done from a common monitoring station as a part of central monitoring system (CMS). The electricity generated from this site is fed to metering arrangement number 58 (Location Nos. RKB 83 + RKB 88 + RKB 89) and metering arrangement number 57 (RKB NL 06) through 33 KV line at 33 KV feeder in 220 KV Ketu Kalan GSS of Suzlon which is further connected to 220 KV GSS, Tiwari, Dist. Jodhpur. The apportioning of the electricity at Tiwari GSS, Jodhpur, Rajasthan is done as per the following method at the wind farm.

Total numbers of wind turbines are connected to a substation through 33 KV different feeders at Ketu Kalan GSS and which is evacuated further to SEB GSS at Tiwari GSS. The generation reading is collectively displayed by the Main Billing meter at Tiwari, Jodhpur substation. Back up meters are also installed at all 33KV feeders as well as Ketu Kalan GSS for energy auditing purpose.

The net generation of each of the wind turbine is then calculated considering parameters reading of kWh export (Generation) and kWh import (Consumption).

Credit subdivision report is prepared based on the import and export of the electricity at the Tiwari substation. Calculations in credit subdivision report for this site are considered as follows.

1. Export multiplication factor is calculated based on the total export of EB main billing meter reading (net electricity supplied to the grid) divided by panel reading of entire wind farm (gross generation by all the WEGs at CMS) as

Export Multiplication Factor = (Export of EB main billing meter reading / panel reading of entire wind farm)

2. Import multiplication factor is calculated based on the total import of EB main billing meter reading (electricity imported from grid) divided by panel reading of entire wind farm (gross generation by all the WEGs at CMS) as

Import Multiplication Factor= (Import of EB meter reading / panel reading of entire wind farm)

Based on the multiplication factor and customer panel generation reading export and import units are calculated as follows

3. Export units = Export Multiplication Factor X Customer Panel Generation

4. Import units = Import Multiplication Factor X Customer Panel Generation

Ultimately net export units (net electricity supplied to the grid) by the specific customer (project participant) is calculated as

5. Net export units (EGy) = Export Units – Import Units

The responsibility of annual calibration, periodical testing, sealing and maintenance of meters is with the respective state utilities. This is done in the presence of representatives of the promoter. The frequency of

meter testing is annual or as decided by the state utility time to time. All meters are tested only at the Metering Point. Additionally, each wind turbine is equipped with an integrated electronic meter. The electricity generated is recorded by the O & M staff of the WTG supplier on 24 hour basis.

Routine Maintenance Services:

Routine maintenance labour work involves making available suitable manpower for operation and maintenance of the equipment and covers periodic preventive maintenance, cleaning and upkeep of the equipment including –

a) Tower Torquing
b) Blade Cleaning
c) Nacelle Torquing and Cleaning
d) Transformer Oil Filtration
e) Control Panel & LT Panel Maintenance
f) Site and Transformer Yard Maintenance

Security Services:

a) This service includes watch and ward and security of the wind farm and the equipment.

Management Services:

Technical Services:

a) Visual inspection of the WEGs and all parts thereof.
b) Technical assistance including checking of various technical, safety and operational parameters of the equipment, trouble shooting and relevant technical services.
c) Maintenance is done every quarter and annually and a checklist is maintained manually for the same.

Note: As SUZLON is an ISO 9001:2000 certified company, training their employees for day to day recording and handling and maintenance is an integral part of their Quality Management System procedure.

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:	**$EF_{grid, CM, y}$**
Unit:	tCO_2 / MWh
Description:	Grid Emission Factor
Source of data:	Calculated
Value(s) applied):	0.9225
Purpose of data:	Used for the Baseline emission Calculation
Additional comment:	Value is fixed for crediting period i.e. 10 years.

Data / Parameter:	**$EF_{grid\ OM, y}$**
Unit:	tCO_2 / MWh
Description:	Operating Margin
Source of data:	CEA – CDM - Carbon Dioxide baseline database Version 5
Value(s) applied):	1.005
Purpose of data:	Used for the Baseline emission Calculation
Additional comment:	Value is fixed for crediting period i.e. 10 years.

Data / Parameter:	$EF_{grid\ BM,\ y}$
Unit:	tCO_2 / MWh
Description:	Build Margin
Source of data:	CEA – CDM - Carbon Dioxide baseline database Version 5
Value(s) applied):	0.675
Purpose of data:	Used for the Baseline emission Calculation
Additional comment:	Value is fixed for crediting period i.e. 10 years.

D.2. Data and parameters monitored

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

Data / Parameter:	$EG_{BL,y}$
Unit:	kWh
Description:	Net Electricity supplied by project activity to the grid
Measured/ Calculated / Default:	Calculated
Source of data:	Monthly credit report/ Share of electricity generation by state electricity utility.
Value(s) of monitored parameter:	16,296,000
Monitoring equipment:	<table><tr><th rowspan="2"></th><th colspan="3">Meter Details</th></tr><tr><th>Meter Serial No.</th><th>Accuracy Class</th><th>Type</th></tr><tr><td>Main Meter</td><td>RJB 00320</td><td>0.2 S</td><td>E3M021,3Ph,4 wire</td></tr><tr><td>Check Meter</td><td>RJB 00319</td><td>0.2 S</td><td>E3M021,3Ph,4 wire</td></tr></table>
Measuring/ Reading/ Recording frequency:	Continuous monitoring and monthly recording
Calculation method (if applicable):	Data Type: calculated based on measured parameter. Detail calculation approach is incorporated in section C of MR. Archiving Policy: Paper & Electronic Responsibility: State electricity utility is responsible for the proportioning of electricity and provides the net electricity generation report to each WTG owner who supplies electricity to grid through common metering system at state utility substation.

QA/QC procedures:	The meters are of high accuracy class (0.2s). The meters are monitored continuously by Suzlon personnel. These are sealed by State Electricity Board officials to avoid malfunctioning with meter readings. The officials frequently check the meters for tempering and malfunctioning with the meters. The meters are checked as per IEC- 60687 standards. Check meter is placed to verify main meter readings. It can be used as a source of reading in case of main meter failure. Meters are calibrated annually by State Electricity Board officials in the presence of Suzlon representative.
Purpose of data:	Used for the Baseline Calculation
Additional comment:	The archive of data will be maintained for crediting period + 2 years.

Data / Parameter:	$\sum_{0}^{n} EG_{n,y}$
Unit:	kWh
Description:	The summation of total Electricity Generated (kWh) at the controller from the project activity connected to single common feeder at a substation on a particular site.
Measured/ Calculated / Default:	Measured
Source of data:	Log sheet records in Suzlon database at CMS.
Value(s) of monitored parameter:	17,092,044
Monitoring equipment:	Controller meter
Measuring/ Reading/ Recording frequency:	Continuous monitoring and recording at a time interval of three minute,
Calculation method (if applicable):	$EG_{n,y}$ is the sum of electricity generated at controller from project activity continuously measured by controller connected to CMS through SCADA network. State electricity utility used this figure to calculate net electricity generation by the project activity. This will be continuously measured and summarized monthly.
QA/QC procedures:	The controller end generation of each WTG is continuously recorded & monitored at CMS. The controller end generation & other sensitive parameter monitoring followed can be cross verified at CMS database.
Purpose of data:	Used for the Baseline Calculation
Additional comment:	Data will be archived during the whole crediting period + 2 years

Data / Parameter:	$\sum_{0}^{m} EG_{m,y}$
Unit:	kWh

Description:	The summation of total Electricity Generated at the controller from all the WTGs including project activity connected to single feeder at a particular site
Measured/ Calculated / Default:	Measured
Source of data:	Log sheet records in Suzlon database at CMS.
Value(s) of monitored parameter:	371,625,577
Monitoring equipment:	Controller meter
Measuring/ Reading/ Recording frequency:	Continuous monitoring and recording at a time interval of three minute,
Calculation method (if applicable):	$EG_{m,y}$ is the sum of electricity generated from all wind turbine (including project activity) continuously measured by controller connected to CMS through SCADA network. State electricity utility used this figure & sum for all WTGs (including project activity) connected to single common feeder. This will be continuously measured and summarized monthly. .
QA/QC procedures:	The controller end generation of each WTG is continuously recorded & monitored at CMS. The controller end generation & other sensitive parameter monitoring followed can be cross verified at CMS database.
Purpose of data:	Used for the Baseline Calculation
Additional comment:	Data will be archived during the whole crediting period + 2 years

Data / Parameter:	**$EG_{JMR,export}$**
Unit:	kWh
Description:	Total electricity export by all WTGs (including project activity) connected to single common feeder measured at the respective substation feeder meter.
Measured/ Calculated / Default:	Measured
Source of data:	Joint meter reading sheet/ Energy breakup sheet monitored by state electricity utility through respective feeder meter at substation.
Value(s) of monitored parameter:	356,377,600
Monitoring equipment:	Energy meter
Measuring/ Reading/ Recording frequency:	Continuous monitoring and monthly recording

Calculation method (if applicable):	The value of total electricity export from the all WTGs connected to the single common feeder is monitored through main meter & check meter at the substation. Monitoring: tri vector meter has been used for monitoring Archiving Policy: Paper & Electronic
QA/QC procedures:	Other than main meter, there is check meter to verify the accuracy of main meter. The calibration of the meters will be done by state utility as per the schedule mentioned in PPA. Other than periodic calibration of the meters the reading of both meters, will be matched every month.
Purpose of data:	Used for the Baseline Calculation
Additional comment:	Data will be archived during the whole crediting period + 2 years

Data / Parameter:	**$EG_{JMR,import}$**
Unit:	kWh
Description:	Total electricity export by all WTGs (including project activity) connected to single common feeder measured at the respective substation feeder meter.
Measured/ Calculated / Default:	Measured
Source of data:	Joint meter reading sheet/ Energy breakup sheet monitored by state electricity utility through respective feeder meter at substation.
Value(s) of monitored parameter:	2,192,000
Monitoring equipment:	Energy meter
Measuring/ Reading/ Recording frequency:	Continuous monitoring and monthly recording
Calculation method (if applicable):	The value of total electricity import from the all WTGs connected to the single common feeder is monitored through main meter & check meter at the substation. Monitoring: tri vector meter will be used for monitoring Archiving Policy: Paper & Electronic
QA/QC procedures:	Other than main meter, there is check meter to verify the accuracy of main meter. The calibration of the meters will be done by state utility as per the schedule mentioned in PPA. Other than periodic calibration of the meters the reading of both meters, will be matched every month.
Purpose of data:	Used for the Baseline Calculation
Additional comment:	Data will be archived during the whole crediting period + 2 years

D.3. Implementation of sampling plan

Not Applicable

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

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

Baseline emissions are calculated as the kWh produced by the project activity multiplied by an emission coefficient for the NEWNE Regional grid, calculated as the Combined Margin (tCO2/MWh) of the current generation mix.

$BE_y = EG_y * EF_{grid, CM, y}$

Where EG_y is the net electricity supplied to the grid by the project in year y, and $EF_{grid, CM, y}$ is the CO2 emissions factor of the NEWNE grid.

$EF_{grid, CM, y}$ is calculated from CDM database provided by CEA.

Baseline emissions (tonnes of CO_2) = EG_y(MWh/year) * $EF_{grid, CM, y}$(tons of CO_2/MWh)

Period	EG_y (MWh)	$EF_{grid, CM, y}$ (tCO_2/MWh)	BE_y (tCO_2)
23/04/2012[4] to 31/12/2012	7670	0.9225	7,075
01/01/2013 to 04/12/2013	8626	0.9225	7957
Total			15,032

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

Being a wind energy project, the project activity does not lead to any form of emission; hence project emission has not been considered in this case.

Hence, $PE_y = 0$

E.3. Calculation of leakage

As there is no transfer of energy generating equipment from another activity nor the existing equipment is transferred to another activity,

Hence, $L_y = 0$

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

Item	Baseline emissions or baseline net GHG removals by sinks ($t CO_2e$)	Project emissions or actual net GHG removals by sinks ($t CO_2e$)	Leakage ($t CO_2e$)	Emission reductions or net anthropogenic GHG removals by sinks ($t CO_2e$)

[4] The start date of this monitoring period is from 23/04/2012, but since the billing cycle of the generated electricity does not matches with this date and no JMR is available for the period 23/04/2012 to 02/05/2012, the electricity generated for the period 23/04/2012 to 02/05/2012 has not been considered for emission reduction calculation. This is for simplification and a conservative approach. Accordingly the emission reduction claimed from 03/05/2012 to 04/12/2013 (Inclusive both days) based on JMR's issued by state utility.

Total	**15,032**	**0**	**0**	**15,032**

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 (t CO_2e)	**16,356**	**15,032**

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

This section is not applicable as value applied in the ex-ante calculation of the registered CDM-PDD is more than the actual values reached during the monitoring period.

E.7. Actual emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards

Item	Actual values achieved up to 31 December 2012	Actual values achieved from 1 January 2013 onwards
Emission reductions or GHG removals by sinks (t CO_2e)	**7,075**	**7,957**

- - - - -

Document information

Version	*Date*	*Description*
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 anthropogenic GHG removals by sinks for the period up to 31 December 2012 and the period from 1 January 2013 onwards (EB70, 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	28 May 2010	EB 54, Annex 34. Initial adoption.

Decision Class: Regulatory
Document Type: Form
Business Function: issuance
Keywords: monitoring report, performance monitoring