



**Monitoring report form  
(Version 05.1)**

*Complete this form in accordance with the Attachment "Instructions for filling out the monitoring report form" at the end of this form.*

**MONITORING REPORT**

<b>Title of the project activity</b>	22.5 MW grid connected wind farm project by RSMML in Jaisalmer, India.	
<b>UNFCCC reference number of the project activity</b>	1602	
<b>Version number of the monitoring report</b>	01	
<b>Completion date of the monitoring report</b>	28/02/2017	
<b>Monitoring period number and duration of this monitoring period</b>	4 <sup>th</sup> monitoring period 02/01/2015 to 05/01/2017 (including first and last day)	
<b>Project participant(s)</b>	Rajasthan State Mines and Minerals Limited (RSMML) Emergent Ventures India Private Limited Swedish Energy Agency	
<b>Host Party</b>	India	
<b>Sectoral scope(s)</b>	01	
<b>Selected methodology(ies)</b>	ACM0002 (Version 06)	
<b>Selected standardized baseline(s)</b>	Not Applicable	
<b>Estimated amount of GHG emission reductions or net GHG removals by sinks for this monitoring period in the registered PDD</b>	56,582	
<b>Total amount of GHG emission reductions or net GHG removals by sinks achieved in this monitoring period</b>	GHG emission reductions or net GHG removals by sinks reported up to 31 December 2012	GHG emission reductions or net GHG removals by sinks reported from 1 January 2013 onwards
	0	41,649

## 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 from wind power, a renewable source of

energy for partly captive purposes and partly sale to the grid.

Apart from generation of renewable electricity, the project has also been conceived for the following:

- To contribute to climate change mitigation efforts
- To enhance the commercialization 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 power project through revenues from the CDM

#### General Description

The project activity, promoted by Rajasthan State Mines and Minerals Limited (RSMML), has been undertaken to harness the available wind power potential at Jaisalmer along with the development of local economy. The project has installation of 6 x 1250 kW (7.5MW) Suzlon Wind Energy Generators (WEG) and 25x600 kW (15 MW), Vestas RRB WEGs, totaling to 22.5 MW at Pohra village and Baramsar/ Pohra village respectively in Jaisalmer district of Rajasthan. These WEGs are interconnected to 33 KV end of 220 KV Grid Sub Station (GSS) Amarsagar at Jaisalmer.

Of the total, 90% of electricity generated by 6 No's of 1250kW (7.5 MW) Suzlon make WEGs at Pohra village is sold to Ajmer DISCOM and the balance 10% is utilized for captive use. Whereas 40% electricity generated by the 25 No's of 600 kW (15 MW) Vestas RRB WEGs at Baramsar/Pohra village is sold to Ajmer DISCOM and rest 60% would be utilized for captive use.

The project activity has sought a 10 year fixed crediting period starting from 11/12/2008. The fourth monitoring is from the period of 02/01/2015 to 05/01/2017 and the total number of CERs generated during the third monitoring period is 41,649.

### A.2. Location of project activity

>>

The wind farm is located at villages Pohra and Baramsar at District Jaisalmer in the state of Rajasthan. The location has been chosen based on the available average wind power potential in the area established by the micro-siting studies done by the Suzlon Energy Limited and Vestas RRB Limited, who are the two suppliers of WEGs.

The project area falls in the district of Jaisalmer and is situated in the villages of Pohra and Baramsar. The location details have been given as below. The nearest airport is at Jodhpur which is 308 km from Jaisalmer.

**Country:** India, **State:** Rajasthan, **District:** Jaisalmer, **Villages:** Pohra and Baramsar

Village	Latitude	Longitude	MSL
Pohra	27° 02' N	70° 57' E	150-325 m
Baramsar	26° 35' N	70° 35' E	279 m

**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 whether the Party involved wishes to be considered as project participant (yes/no)
Government of India (Host Country)	Rajasthan State Mines and Minerals Limited (RSMML) (Public Entity)	No
Switzerland	Emergent Ventures India Private Limited (Private Entity)	No
Sweden	Swedish Energy Agency (Private Entity)	No

**A.4. Reference of applied methodology and standardized baseline**

&gt;&gt;

Methodology Number	ACM0002
Methodology Title	“Approved Consolidated Baseline Methodology for grid connected electricity generation from renewable sources”
Version	06
Sectoral Scope	01

**A.5. Crediting period of project activity**

&gt;&gt;

The project activity has sought a 10 year fixed crediting period starting from 11/12/2008 and ending on 10/12/2018 ((both, start & end, days are included)). The current (4<sup>th</sup>) monitoring period is starting from 02/01/2015 and ending on 05/01/2017 (both, start & end, days are included).

**A.6. Contact information of responsible persons/entities**

&gt;&gt;

Consultant<sup>1</sup> :-  
 Chandra Prakash Bhatt\*  
 The EcoPreneurs \*  
 1000, Sector-21, Gurgaon -122016, India  
 Tel: +91-124-4062041  
 Mob:+91-9650104455  
 Email: [cpbhatt.te@gmail.com](mailto:cpbhatt.te@gmail.com)

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

&gt;&gt;

<sup>1</sup> Note:- This entity , is not a project participant, is Consultant. The details of project participants are provided in Appendix 1 of MR.

The wind farm is located at villages Pohra and Baramsar at District Jaisalmer in the state of Rajasthan. The location has been chosen based on the available average wind power potential in the area established by the micrositing studies done by the Suzlon Energy Limited and Vestas RRB Limited, who are the two suppliers of WEGs.

The project activity started on 15th December 2005 and is estimated to generate approximately 31.5 Million Units in a year. Project was implemented and commissioned before the registration. All facilities and equipment's have been installed.

**Table 3: Details of Suzlon WEGs:**

Sr.No	WEG No.(SEL)	No. of WEGs	Capacity	Date of commissionin	Village	Khasra Number
1	J-91	1	1250 kW	25.03.2006	Pohra	443
2	J-92	1	1250 kW	25.03.2006	Pohra	455
3	J-93	1	1250 kW	25.03.2006	Pohra	451
4	J-94	1	1250 kW	25.03.2006	Pohra	451
5	J-95	1	1250 kW	25.03.2006	Pohra	450
6	J-99	1	1250 kW	25.03.2006	Pohra	458

**Table 4: Details of Vestas RRB WEGs**

Sr.No	WEG No.(Vestas)	No. of WEGs	Capacity	Date of commissioning	Village	Khasra Number
1	B1	1	600 kW	30.09.2006	Baramsar	1103
2	B2	1	600 kW	30.09.2006	Baramsar	1103
3	B3	1	600 kW	30.09.2006	Baramsar	1104
4	B4	1	600 kW	30.09.2006	Baramsar	1101
5	B5	1	600 kW	30.09.2006	Baramsar	1104
6	B6	1	600 kW	30.09.2006	Baramsar	1105
7	B7	1	600 kW	30.09.2006	Baramsar	1106
8	B8	1	600 kW	30.09.2006	Baramsar	1195
9	B9	1	600 kW	30.09.2006	Baramsar	1195
10	B10	1	600 kW	30.09.2006	Baramsar	1062
11	B11	1	600 kW	30.09.2006	Baramsar	1062
12	B12	1	600 kW	30.09.2006	Baramsar	1061
13	B13	1	600 kW	30.09.2006	Baramsar	1106
14	B14	1	600 kW	30.09.2006	Baramsar	1121
15	B15	1	600 kW	30.09.2006	Pohra	1084
16	B16	1	600 kW	30.09.2006	Pohra	1084
17	B17	1	600 kW	30.09.2006	Pohra	1084
18	B18	1	600 kW	30.09.2006	Pohra	1083
19	B19	1	600 kW	30.09.2006	Pohra	1078
20	B20	1	600 kW	30.09.2006	Pohra	1077
21	B21	1	600 kW	30.09.2006	Pohra	1077
22	B22	1	600 kW	14.10.2006	Pohra	1078
23	B23	1	600 kW	14.10.2006	Pohra	1078
24	B24	1	600 kW	14.10.2006	Pohra	1071
25	B25	1	600 kW	14.10.2006	Pohra	1013

All WEGs have been operating smoothly and there have been no case reported for downtimes or exchange of equipment during current monitoring period.

No events or situations took place during the monitoring period which would have impacted the applicability of the methodology used in the project activity.

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

&gt;&gt;

No deviation is applied in this monitoring period from registered monitoring plan, applied methodology or applied standardized baseline.

**B.2.2. Corrections**

&gt;&gt;

There are no corrections to the project information or parameter fixed at validation.

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

&gt;&gt;

There is no change in start date of project activity.

**B.2.4. Inclusion of a monitoring plan to the registered PDD that was not included at registration**

&gt;&gt;

There is no change in registered PDD. There is no delayed submission of monitoring plan chosen by project participant at the time of registration of project activity.

**B.2.5. Permanent changes from registered monitoring plan, applied methodology or applied standardized baseline**

&gt;&gt;

There are no permanent changes from registered monitoring plan, applied methodology or applied standardized baseline.

**B.2.6. Changes to project design of registered project activity**

&gt;&gt;

There are no changes to the project design of project activity.

**B.2.7. Types of changes specific to afforestation or reforestation project activity**

&gt;&gt;

Not applicable as project activity is not afforestation or reforestation project activity.

**SECTION C. Description of monitoring system**

&gt;&gt;

Metering and related issues:

1. The generated electricity is purchased by the state electricity utility of Rajasthan and also consumed by RSMML for captive purpose. The meters are therefore calibrated, sealed and managed by the state electricity utility. Of the total, 90% of electricity generated by 6 No.s of 1250kW (7.5 MW) Suzlon make WEGs at Pohra village is sold to Ajmer DISCOM and the balance 10% is utilized for captive use. Whereas 40% electricity generated by the

25 No.s of 600 kW (15 MW) Vestas RRB WEGs at Baramsar/Pohra village is sold to Ajmer DISCOM and rest 60% would be utilized for captive use. The single line diagram (SLD) of Amarsagar substation is provided in Appendix 1.

2. The electricity generation measurements are required by the utility and the investors to assess electricity sales revenue and / or wheeling charges.
3. The metering equipment at the delivery point is in accordance with the relevant provisions of the metering code and is situated at the Amarsagar substation.
4. The project activity has therefore two independent measurements of generated electricity from the wind turbines.
5. The primary recording of the electricity fed to the state utility grid is carried out jointly at the incoming feeder of the state electricity utility (RVPNL). All the machines in the project are connected to the feeder.
6. There are two energy meters installed at the substation. In the event that the main metering system is not in service due to maintenance, repair or testing, then the backup metering system (Check meter) shall be used during the period the main metering system is not in service. Both the meters and the metering boxes are sealed by RVPNL.
7. The joint measurement is carried out once in a month in presence of both parties (the developer's representative and officials of the state power utility). Both parties sign the recorded reading.
8. The meters are tested for accuracy annually by the RVPNL.
9. Calibration of the machines is taken care of during the annual testing of the meters.

**Calibration details of energy meters in the current monitoring period:**

*Set of meters for SUZLON WEGs*

Type	Sr. no.	2014
Main Meter	RJB1209	17/01/2014
Backup Meter	RJU02145	17/01/2014

*Set of meters for VESTAS RRB WEGs*

Type	Sr. no.	Date of Calibration 2014
Main Meter	TNB03312	09/04/2014
Backup Meter	RJU02174	09/04/2014

10. Calibration details for the controller

Controller meter is a self-calibrated type meters and does not require calibrations. This is a micro-processor based intelligent controller which has been specially designed for control of wind turbines. It uses a Woodward Multi-function Relay that has three current inputs from CT and three direct voltage inputs (690 Volts). The analog values of current / voltage is converted into digital signal internally using A/D Converters at very high sampling rate. A software program reads these values and displays instantaneous parameters such as voltage, current, power factor, kVAh, kVArh and kWh. These instantaneous values are then time integrated and displayed / stored. Woodward relay is having no display and needs special protocol to view energy readings as this relay is communicating digital signal through special communication protocol hence, it is not possible to calibrate. Moreover, turbine can not run without this relay hence it can not be removed for calibration during operation.

11. The secondary monitoring, which provides 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. The generation data of individual machine can be monitored as a real-time entity at CMS.
12. The controller reading is sent to the utility every month for the purpose of cross checking.
13. Wherever, more than one Power Producer(s) are injecting energy produced by them using the common evacuation/ injection system and through the common metering equipment with RVPNL, the joint meter reading taken at common evacuation/ injection system shall be supported by meter readings of individual power producers using such common evacuation/injection system. Based on this break up limited to total energy injection, the power supplied from the individual power plant shall be regulated for the purpose of apportioning the electricity exported to the grid.

Thus, based on 'break up energy export' and 'break up energy import', final net generation is calculated and mentioned in the Break up sheet, certified by RVPNL (which is sent to each client). Invoice is raised to the RVPNL against the net generation mentioned on the Break up sheet only.

#### **Operation and Maintenance Practices and Structure:**

The operation and maintenance for the project has been assigned to Suzlon Energy Limited and Vestas RRB India Ltd. for 7.5 MW and 15 MW respectively. The following is a list of some of the services undertaken by both the companies in order to ensure the efficient running of the plant.

##### 1. 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.

##### 2. Security Services:

This service includes watch and ward and Security of the Wind Farm and the Equipment.

##### 3. Management Services:

- a) Data logging in for power generation, grid availability, machine availability.
- b) Preparation and submission of monthly performance report in agreed format.
- c) Taking monthly meter reading jointly with SEB, of power generated at RSMML's Wind Farm and supplied to SEB Grid from the meter/s maintained by SEB for the purpose and co-ordinate to obtain necessary power credit report/ certificate.

##### 4. Technical Services:

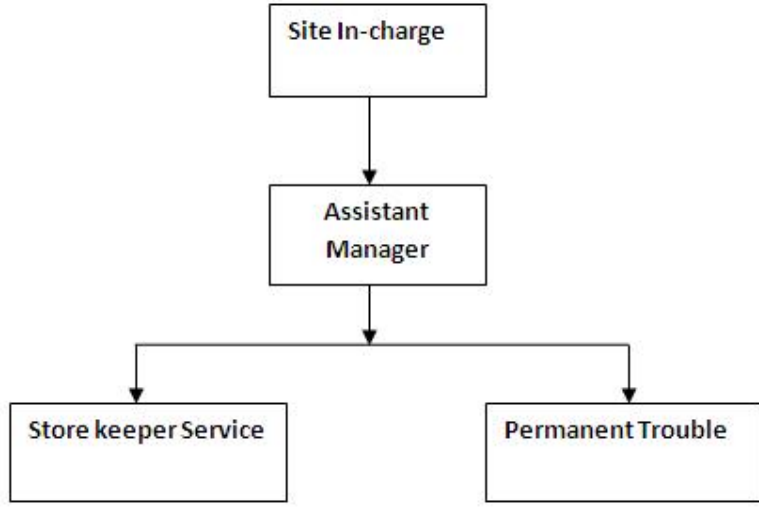
- a. Visual inspection of the WEG and all parts thereof
- b. Technical Assistance including checking of various technical, safety and operational parameters of the Equipment, trouble shooting and relevant technical services.

Performance review is carried out for both the parts of the entire project regularly. In case of any problem, both the companies take action as soon as possible. They shall also be liable to replace any part(s) that may fail or show signs of defects for the entire life term of the project. The O&M team at the site takes care of these performance reviews to maintain generation of electricity from this renewable source and carries out the GHG audits at the site.

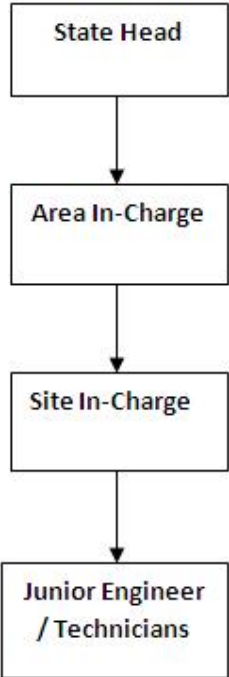
#### **A. Vestas**

Store keeper Service

Permanent Trouble



**B. Suzlon**



**Roles and responsibilities:**

**A. Vestas**

**Designation**  
**Site In-Charge**

**Responsibilities**  
-Over All in charge for Rajasthan  
-Administration ,Planning, Setting of Wind mills  
-Smooth functioning of Site



- Assistant Manager - Service** - Planning, Adherence of maintenance , Correspondence
- Store Keeper Service** - Maintaining the stock level and related correspondence ,data entry
- Permanent Trouble Shooter** -Attending of fault in minimum possible time

B. Suzlon

<p><b>State Head</b></p> <ul style="list-style-type: none"> <li>• Smooth functioning of Site</li> <li>• Over All in charge for Rajasthan</li> <li>• Administration ,Planning, Setting of Wind mills</li> </ul>
<p><b>Area In-Charge</b></p> <ul style="list-style-type: none"> <li>• Planning, Adherence of Maintenance and operations ,Correspondence</li> </ul>
<p><b>Site In-Charge</b></p> <ul style="list-style-type: none"> <li>• Verification of the data</li> <li>• Site visit to check authenticity of data and take corrective action, wherever necessary</li> </ul>
<p><b>Junior Engineer</b></p> <ul style="list-style-type: none"> <li>• Operation and Monitoring of the data</li> <li>• Data recording</li> <li>• Reporting the data</li> <li>• Archiving of data</li> <li>• Check, if any, disturbance in the functioning of the WTG, meter</li> <li>• Rectify the source of error at the earliest</li> </ul>

**Data Collection and Archiving:**

The monthly data of electricity generated is collected in both print and electronic form. However, the data in electronic form is archived throughout the life time of the project. The electricity records are maintained regularly by the team at the site.

**SECTION D. Data and parameters**

**D.1. Data and parameters fixed ex ante or at renewal of crediting period**

<b>Data/parameter:</b>	EF <sub>y</sub> (Combined Margin)
Unit	tCO <sub>2</sub> e/MWh
Description	CO <sub>2</sub> emission factor of the Northern Region Grid
Source of data	Calculated as weighted sum of the OM and BM emission factors. The formulae for this are as per ACM0002, version 06
Value(s) applied)	0.8971
Choice of data or measurement methods and procedures	Calculated as weighted sum of the OM and BM emission factors. The formula and 'choice of data' for this is as per "Tool to Calculate the Emission Factor for an Electricity System".
Purpose of data	Baseline Emission Calculation
Additional comments	The EF <sub>y</sub> is fixed over the project's crediting period and is calculated as the weighted average of the Operating Margin emission factor and the Build Margin emission factor.

**D.2. Data and parameters monitored**

## A.

<b>Data/parameter:</b>	<b>EG<sub>y,net</sub></b> ( $EG_{y,export} - EG_{y,import}$ )																																					
Unit	kWh																																					
Description	Net electricity supplied to grid by the project																																					
Measured/calculated/default	Calculated																																					
Source of data	JMR Sheets/measurement records of the EPC contractor.																																					
Value(s) of monitored parameter	4,64,24,262																																					
Monitoring equipment	<table border="1"> <thead> <tr> <th colspan="3"><i>Meter connected to SUZLON 7.5 MW WEGs</i></th> </tr> </thead> <tbody> <tr> <td><i>Type</i></td> <td>Electronic Trivector Meter</td> <td>Electronic Trivector Meter</td> </tr> <tr> <td><i>Sr.No.</i></td> <td>RJB1029</td> <td>RJU02145</td> </tr> <tr> <td><i>Change of meter during crediting period</i></td> <td>No</td> <td>No</td> </tr> <tr> <td><i>Accuracy Class</i></td> <td>0.2s</td> <td>0.2s</td> </tr> <tr> <td><i>Annual testing/calibration (2014) &amp; Validity</i></td> <td>17/01/2014 &amp; Valid upto 16/01/2015</td> <td>17/01/2014 &amp; Valid upto 16/01/2015</td> </tr> <tr> <th colspan="3"><i>Meter connected to VESTAS RRB 15 MW WEGs</i></th> </tr> <tr> <td><i>Type</i></td> <td>Electronic Trivector Meter</td> <td>Electronic Trivector Meter</td> </tr> <tr> <td><i>Sr.No.</i></td> <td>TNB03312</td> <td>RJU02174</td> </tr> <tr> <td><i>Change of meter during crediting period</i></td> <td>No</td> <td>No</td> </tr> <tr> <td><i>Annual testing/calibration (2014) &amp; Validity</i></td> <td>09/04/2014 &amp; Valid upto 08/04/2015</td> <td>09/04/2014 &amp; Valid upto 08/04/2015</td> </tr> <tr> <td><i>Accuracy Class</i></td> <td>0.2s</td> <td>0.2s</td> </tr> </tbody> </table>		<i>Meter connected to SUZLON 7.5 MW WEGs</i>			<i>Type</i>	Electronic Trivector Meter	Electronic Trivector Meter	<i>Sr.No.</i>	RJB1029	RJU02145	<i>Change of meter during crediting period</i>	No	No	<i>Accuracy Class</i>	0.2s	0.2s	<i>Annual testing/calibration (2014) &amp; Validity</i>	17/01/2014 & Valid upto 16/01/2015	17/01/2014 & Valid upto 16/01/2015	<i>Meter connected to VESTAS RRB 15 MW WEGs</i>			<i>Type</i>	Electronic Trivector Meter	Electronic Trivector Meter	<i>Sr.No.</i>	TNB03312	RJU02174	<i>Change of meter during crediting period</i>	No	No	<i>Annual testing/calibration (2014) &amp; Validity</i>	09/04/2014 & Valid upto 08/04/2015	09/04/2014 & Valid upto 08/04/2015	<i>Accuracy Class</i>	0.2s	0.2s
<i>Meter connected to SUZLON 7.5 MW WEGs</i>																																						
<i>Type</i>	Electronic Trivector Meter	Electronic Trivector Meter																																				
<i>Sr.No.</i>	RJB1029	RJU02145																																				
<i>Change of meter during crediting period</i>	No	No																																				
<i>Accuracy Class</i>	0.2s	0.2s																																				
<i>Annual testing/calibration (2014) &amp; Validity</i>	17/01/2014 & Valid upto 16/01/2015	17/01/2014 & Valid upto 16/01/2015																																				
<i>Meter connected to VESTAS RRB 15 MW WEGs</i>																																						
<i>Type</i>	Electronic Trivector Meter	Electronic Trivector Meter																																				
<i>Sr.No.</i>	TNB03312	RJU02174																																				
<i>Change of meter during crediting period</i>	No	No																																				
<i>Annual testing/calibration (2014) &amp; Validity</i>	09/04/2014 & Valid upto 08/04/2015	09/04/2014 & Valid upto 08/04/2015																																				
<i>Accuracy Class</i>	0.2s	0.2s																																				
Measuring/reading/recording frequency:	Monthly																																					
Calculation method (if applicable):	The EPC contractor is responsible for JMR with RVPNL. The JMR taken at common evacuation system and supported by meter readings of individual power producers using the common evacuation system is used for calculating the break up. Based on this break up, the power generated from the individual Clients shall be calculated.																																					
QA/QC procedures:	The meters are calibrated once in each year																																					
Purpose of data:	For baseline emission calculation																																					
Additional comments:	The data will be archived 2 years beyond crediting period																																					

## B.

<b>Data/parameter:</b>	<b>EG<sub>y, export</sub></b>
Unit	kWh
Description	Electricity export to grid by the project activity
Measured/calculated/default	Measured for Suzlon 7.5 MW WEG's and Calculated for Vestas 15 MW WEG's
Source of data	JMR Sheets and share certificates issued by state electricity utility

Value(s) of monitored parameter	46,880,672																																				
Monitoring equipment	<table border="1"> <thead> <tr> <th colspan="3"><i>Meter connected to SUZLON 7.5 MW WEGs</i></th> </tr> <tr> <th><i>Type</i></th> <th>Electronic Trivector Meter</th> <th>Electronic Trivector Meter</th> </tr> </thead> <tbody> <tr> <td><i>Sr.No.</i></td> <td>RJB1029</td> <td>RJU02145</td> </tr> <tr> <td><i>Change of meter during crediting period</i></td> <td>No</td> <td>No</td> </tr> <tr> <td><i>Accuracy Class</i></td> <td>0.2s</td> <td>0.2s</td> </tr> <tr> <td><i>Annual testing/calibration (2014) &amp; Validity</i></td> <td>17/01/2014 &amp; Valid upto 16/01/2015</td> <td>17/01/2014 &amp; Valid upto 16/01/2015</td> </tr> <tr> <th colspan="3"><i>Meter connected to VESTAS RRB 15 MW WEGs</i></th> </tr> <tr> <th><i>Type</i></th> <th>Electronic Trivector Meter</th> <th>Electronic Trivector Meter</th> </tr> <tr> <td><i>Sr.No.</i></td> <td>TNB03312</td> <td>RJU02174</td> </tr> <tr> <td><i>Change of meter during crediting period</i></td> <td>No</td> <td>No</td> </tr> <tr> <td><i>Annual testing/calibration (2014) &amp; Validity</i></td> <td>09/04/2014 &amp; Valid upto 08/04/2015</td> <td>09/04/2014 &amp; Valid upto 08/04/2015</td> </tr> <tr> <td><i>Accuracy Class</i></td> <td>0.2s</td> <td>0.2s</td> </tr> </tbody> </table>	<i>Meter connected to SUZLON 7.5 MW WEGs</i>			<i>Type</i>	Electronic Trivector Meter	Electronic Trivector Meter	<i>Sr.No.</i>	RJB1029	RJU02145	<i>Change of meter during crediting period</i>	No	No	<i>Accuracy Class</i>	0.2s	0.2s	<i>Annual testing/calibration (2014) &amp; Validity</i>	17/01/2014 & Valid upto 16/01/2015	17/01/2014 & Valid upto 16/01/2015	<i>Meter connected to VESTAS RRB 15 MW WEGs</i>			<i>Type</i>	Electronic Trivector Meter	Electronic Trivector Meter	<i>Sr.No.</i>	TNB03312	RJU02174	<i>Change of meter during crediting period</i>	No	No	<i>Annual testing/calibration (2014) &amp; Validity</i>	09/04/2014 & Valid upto 08/04/2015	09/04/2014 & Valid upto 08/04/2015	<i>Accuracy Class</i>	0.2s	0.2s
<i>Meter connected to SUZLON 7.5 MW WEGs</i>																																					
<i>Type</i>	Electronic Trivector Meter	Electronic Trivector Meter																																			
<i>Sr.No.</i>	RJB1029	RJU02145																																			
<i>Change of meter during crediting period</i>	No	No																																			
<i>Accuracy Class</i>	0.2s	0.2s																																			
<i>Annual testing/calibration (2014) &amp; Validity</i>	17/01/2014 & Valid upto 16/01/2015	17/01/2014 & Valid upto 16/01/2015																																			
<i>Meter connected to VESTAS RRB 15 MW WEGs</i>																																					
<i>Type</i>	Electronic Trivector Meter	Electronic Trivector Meter																																			
<i>Sr.No.</i>	TNB03312	RJU02174																																			
<i>Change of meter during crediting period</i>	No	No																																			
<i>Annual testing/calibration (2014) &amp; Validity</i>	09/04/2014 & Valid upto 08/04/2015	09/04/2014 & Valid upto 08/04/2015																																			
<i>Accuracy Class</i>	0.2s	0.2s																																			
Measuring/reading/recording frequency:	Monthly																																				
Calculation method (if applicable):	The EPC contractor is responsible for JMR with RVPNL. The JMR taken at common evacuation system and supported by meter readings of individual power producers using the common evacuation system is used for calculating the break up. Based on this break up, the power generated from the individual Clients shall be calculated.																																				
QA/QC procedures:	The meters are calibrated once in each year																																				
Purpose of data:	For baseline emission calculation																																				
Additional comments:	The data will be archived 2 years beyond crediting period																																				

**C.**

<b>Data/parameter:</b>	<b>EG<sub>y, import</sub></b>
Unit	kWh
Description	Electricity import from the grid by the project
Measured/calculated/default	Measured for Suzlon 7.5 MW WEG's and Calculated for Vestas 15 MW WEG's
Source of data	JMR Sheets and share certificates issued by state electricity utility
Value(s) of monitored parameter	454,410

Monitoring equipment	<i>Meter connected to SUZLON 7.5 MW WEGs</i>		
	<i>Type</i>	Electronic Trivector Meter	Electronic Trivector Meter
	<i>Sr.No.</i>	RJB1029	RJU02145
	<i>Change of meter during crediting period</i>	No	No
	<i>Accuracy Class</i>	0.2s	0.2s
	<i>Annual testing/calibration (2014) &amp; Validity</i>	17/01/2014 & Valid upto 16/01/2015	17/01/2014 & Valid upto 16/01/2015
	<i>Meter connected to VESTAS RRB 15 MW WEGs</i>		
	<i>Type</i>	Electronic Trivector Meter	Electronic Trivector Meter
	<i>Sr.No.</i>	TNB03312	RJU02174
	<i>Change of meter during crediting period</i>	No	No
	<i>Annual testing/calibration (2014) &amp; Validity</i>	09/04/2014 & Valid upto 08/04/2015	09/04/2014 & Valid upto 08/04/2015
	<i>Accuracy Class</i>	0.2s	0.2s
	Measuring/reading/recording frequency:	Monthly	
	Calculation method (if applicable):	The EPC contractor is responsible for JMR with RVPNL. The JMR taken at common evacuation system and supported by meter readings of individual power producers using the common evacuation system is used for calculating the break up. Based on this break up, the power generated from the individual Clients shall be calculated.	
QA/QC procedures:	The meters are calibrated once in each year		
Purpose of data:	For baseline emission calculation		
Additional comments:	The data will be archived 2 years beyond crediting period		

**D.3. Implementation of sampling plan**

&gt;&gt;

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**

&gt;&gt;

**Calculation of Baseline Emission Factor EF<sub>y</sub>:**

Baseline emission factor EF<sub>y</sub> is calculated as the weighted average of the Operating Margin emission factor (EF<sub>OM,y</sub>) and the Build Margin emission factor (EF<sub>BM,y</sub>):

$$EF_y = w_{OM} \cdot EF_{OM,y} + w_{BM} \cdot EF_{BM,y}$$

Where the weights  $w_{OM}$  and  $w_{BM}$  are 75% and 25% respectively, and EF<sub>OM,y</sub> and EF<sub>BM,y</sub> are calculated as described above and are expressed in tCO<sub>2</sub>/MWh.

The Baseline Emission factor EF<sub>y</sub> is estimated as 0.8971 tCO<sub>2</sub>/MWh.

**Baseline Emission:**

Baseline emissions due to displacement of grid electricity are the product of the baseline emission factor (EF<sub>y</sub>), times the electricity supplied by the project activity to the grid (EG<sub>y</sub>), over the crediting period. The total baseline emissions:

$$BE_y \text{ (tCO}_2\text{/yr)} = EG_{y \text{ net}} * EF_y$$

Where;

BE<sub>y</sub> = Baseline emissions in year y (tCO<sub>2</sub>).

EG<sub>y net</sub> (MWh/yr) = Net Electricity generated by the project in year y;

EF<sub>y</sub> (tCO<sub>2</sub>/MWh) = CO<sub>2</sub> emission factor of the Northern Region Grid

Parameter	Value	Unit	Source
EG <sub>y net</sub>	46,426	MWh	Corrected readings <sup>2</sup> JMR
EF <sub>y</sub>	0.8971	tCO <sub>2</sub> /MWh	As per registered PDD (Ex-ante)
BE <sub>y</sub>	41,649	tCO <sub>2e</sub> /year	Calculated

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

>>

The project activity being a zero emissions renewable energy project, there are no anthropogenic greenhouse gas emission by the project activity.

**E.3. Calculation of leakage**

>>

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

<sup>2</sup> Applying the maximum permissible error of the meter to the measured values, as the results of the delayed calibration do not show any errors in the measuring equipment and the error is smaller than the maximum permissible error;

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

Item	Baseline emissions or baseline net GHG removals by sinks (t CO <sub>2</sub> e)	Project emissions or actual net GHG removals by sinks (t CO <sub>2</sub> e)	Leakage (t CO <sub>2</sub> e)	GHG emission reductions or net GHG removals by sinks (t CO <sub>2</sub> e) achieved in the monitoring period		
				Up to 31/12/2012	From 01/01/2013	Total amount
<b>Total</b>	41649	0	0	0	41640	41649

**E.5. Comparison of actual emission reductions or net 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 <sub>2</sub> e)	56,582 <sup>3</sup>	41,649

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

&gt;&gt;

The difference between the estimated and the actual emission reductions are due to change in the wind pattern and the PLF achieved is lower than expected in this monitoring period.

<sup>3</sup> This value of CERs calculated for 2 years with reference to 28,291CERs/year as mentioned in registered PDD.

## Appendix 1. Contact information of project participants and responsible persons/entities

<b>Project participant and/or responsible person/ entity</b>	<input checked="" type="checkbox"/> Project participant <input type="checkbox"/> Person/entity responsible for completing the CDM-MR-FORM
<b>Organization name</b>	Rajasthan State Mines and Minerals Limited.
<b>Street/P.O. Box</b>	4,Meera Marg
<b>Building</b>	Corporate office
<b>City</b>	Udaipur
<b>State/region</b>	Rajasthan
<b>Postcode</b>	313004
<b>Country</b>	India
<b>Telephone</b>	+91 294 2528681-5, 2527379
<b>Fax</b>	+91 294 2523170, 2521727
<b>E-mail</b>	rsmml@sancharnet.in
<b>Website</b>	http://www.rsmm.com
<b>Contact person</b>	Mr. Gopal Gandhi
<b>Title</b>	Deputy General Manager – (Proj./ Elect).
<b>Salutation</b>	Mr.
<b>Last name</b>	Gandhi
<b>Middle name</b>	
<b>First name</b>	Gopal
<b>Department</b>	Finance
<b>Mobile</b>	+91-294-2527379, 2521724
<b>Direct fax</b>	-
<b>Direct tel.</b>	-
<b>Personal e-mail</b>	gopalgandhi@rsmm.com

<b>Project participant and/or responsible person/ entity</b>	<input type="checkbox"/> Project participant <input checked="" type="checkbox"/> Responsible person/ entity for completing the CDM-MR-FORM
<b>Organization name</b>	The EcoPreneurs
<b>Street/P.O. Box</b>	Sector-21
<b>Building</b>	1000
<b>City</b>	Gurgaon
<b>State/Region</b>	Haryana
<b>Postcode</b>	122016
<b>Country</b>	India
<b>Telephone</b>	+91-124-4062041
<b>Fax</b>	-
<b>E-mail</b>	<a href="mailto:cpbhatt.te@gmail.com">cpbhatt.te@gmail.com</a>
<b>Website</b>	<a href="http://www.ecopreneurs.in">www.ecopreneurs.in</a>
<b>Contact person</b>	Chandra Prakash Bhatt
<b>Title</b>	Head
<b>Salutation</b>	Mr.

<b>Last name</b>	Bhatt
<b>Middle name</b>	Prakash
<b>First name</b>	Chandra
<b>Department</b>	Climate Change & Sustainability
<b>Mobile</b>	+91-9650104455
<b>Direct fax</b>	-
<b>Direct tel.</b>	+91-9650104455
<b>Personal e-mail</b>	<a href="mailto:cpbhatt.te@gmail.com">cpbhatt.te@gmail.com</a>



-----

### Document information

Version	Date	Description
05.1	4 May 2015	Editorial revision to correct version numbering.
05.0	1 April 2015	Revisions to: <ul style="list-style-type: none"> <li>• Include provisions related to delayed submission of a monitoring plan;</li> <li>• Provisions related to the Host Party;</li> <li>• Remove reference to programme of activities;</li> <li>• Overall editorial improvement.</li> </ul>
04.0	25 June 2014	Revisions to: <ul style="list-style-type: none"> <li>• Include the Attachment: Instructions for filling out the monitoring report form (these instructions supersede the "Guideline: Completing the monitoring report form" (Version 04.0));</li> <li>• Include provisions related to standardized baselines;</li> <li>• Add contact information on a responsible person(s)/entity(ies) for completing the CDM-MR-FORM in A.6 and Appendix 1;</li> <li>• Change the reference number from <i>F-CDM-MR</i> to <i>CDM-MR-FORM</i>;</li> <li>• Editorial improvement.</li> </ul>
03.2	5 November 2013	Editorial revision to correct table in page 1.
03.1	2 January 2013	Editorial revision to correct table in section E.5.
03.0	3 December 2012	Revision required to introduce a provision on reporting actual emission reductions or net GHG removals by sinks for the period up to 31 December 2012 and the period from 1 January 2013 onwards (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		