



**Monitoring report form
(Version 04.0)**

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

MONITORING REPORT

Title of the project activity	15 MW Wind Energy Project in Maharashtra
Reference number of the project activity	1778 ¹
Version number of the monitoring report	01
Completion date of the monitoring report	20/11/2014
Registration date of the project activity	24/10/2008
Monitoring period number and duration of this monitoring period	Monitoring period number : 04 Monitoring period: 01/07/2012 to 31/08/2014 (First and Last date included)
Project participant(s)	M/s D. J. Malpani
Host Party(ies)	India
Sectoral scope and selected methodology(ies), and where applicable, applied standardized baseline(s)	Sectoral Scope(s): 01- Energy industries (renewable - / non-renewable sources) Selected methodology: AMS- I. D. (Version: 11) – Grid connected renewable electricity generation
Estimated amount of GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period in the registered PDD	$(25,848 * (792/365)) = 56,087 \text{ tCO}_2$
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period	49,042 tCO ₂
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period up to 31 December 2012(if applicable)	9,780 tCO ₂
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period from 1 January 2013 onwards (if applicable).	39,262 tCO ₂

¹ <http://cdm.unfccc.int/Projects/DB/BVQI1207584460.66/view>

SECTION A. Description of project activity

A.1. Purpose and general description of project activity

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Purpose of the project activity and the measures taken to reduce greenhouse gas emissions:

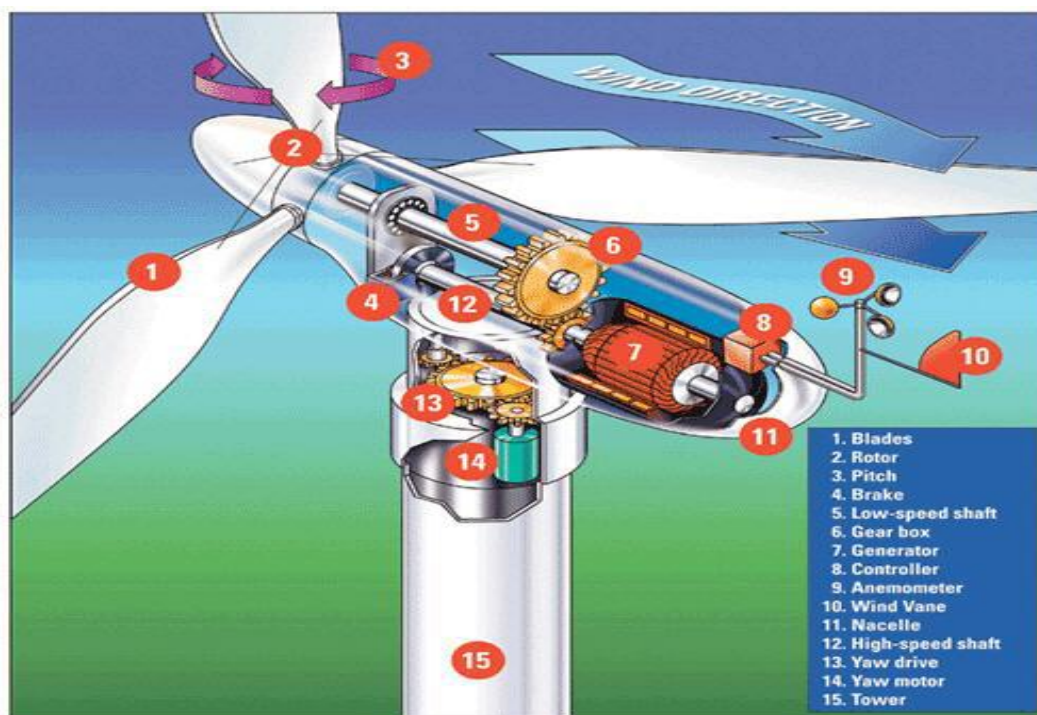
The implemented project activity by M/s D. J. Malpani consists of twelve WTG² in Dhulia and Nandurbar district of Maharashtra. The total installed capacity of the project activity is 15 MW having twelve WTGs of 1.25 MW individual capacity. All the WTGs of the project activity are installed in three phases at various locations within Maharashtra.

The main purpose of the project activity is to generate electrical energy through sustainable means using wind power resources, to sell the generated electricity to the state electricity utility namely Maharashtra State Electricity Distribution Company Limited (MSEDCL) which falls under Western region grid³ of India (now part of integrated NEWNE grid) and thus leads to CO₂ emission reduction due to the displacement of equivalent amount of electricity.

Brief description of the installed technology and equipments;

The project activity consists of twelve Wind Electric Generators (WTGs) of 1.25 MW (Suzlon make - S 70). The project activity does not involve any technology transfer. Description of the technology applied in the project activity and detailed technical process, including diagrams are as follows

The technology is a clean technology since there are no GHG emissions associated with the electricity generation. The implemented project activity consists of twelve WTGs of 1.25 MW individual capacities (Suzlon make S 70 model). Salient features of the model S 70 WTGs are –



² The terms WEG (Wind Electric Generator) and WTG (Wind Turbine Generator) used in the registered PDD having a same meaning. Hence, we consider WTG in this monitoring report for simplicity.

³ As per the new delineation of electricity system in India, western region grid is a part of integrated NEWNE grid.

Technical Details of 1.25 MW (S 70) WTG

Sr. No.	Particulars	Specifications
1.	Rotor diameter	69.1 m
2.	Hub height	74 m
3.	Installed electrical output	1250 kW
4.	Cut-in wind speed	3 m/s
5.	Rated wind speed	12 m/s
6.	Cut-out wind speed	20 m/s
7.	Rotor swept area	3750 m ²
8.	Rotational speed	13.2/19.8
9.	Rotor material	GRP
10.	Regulation	Pitch
11.	Generator	Asynchronous Generator, 4/6 poles
12.	Rated output	250/1250 kW
13.	Rotational speed	1010/1515 rpm
14.	Operating voltage	690 V
15.	Frequency	50 Hz
16.	Protection	IP 56
17.	Insulation class	H
18.	Cooling system	Air cooled
19.	Gear box	3 stage gear box, 1 planetary & 2 helical
20.	Manufacturer	Winergy
21.	Gear ratio	77.848
22.	Nominal load	1390 kW
23.	Type of cooling	Oil cooling system
24.	Yaw drive system	4 active electrical yaw motors
25.	Yaw bearing	Polyamide slide bearing
26.	Safety system	
26.1	Aerodynamic brake	3 times independent pitch regulation
26.2	Mechanical brake	Spring power disc brake, hydraulically released, fail safe, Microprocessor controlled, indicating.
27.	Control unit	Actual operating conditions, UPS back -up system
28.	Tower	Tubular
29.	Design standards	GL/IEC

Relevant dates for the project activity

The Commissioning dates, capacity, location number, location for all the WTGs of the project activity for each phase is provided in table A1.1

Phase	WTG Location no.	Installed Capacity (MW)	Village, District	Date of Commissioning ⁴
Phase-I	K 400	1.25	Mandal, Nandurbar	31/12/2005
	K 401	1.25	Mandal, Nandurbar	31/12/2005
	K 402	1.25	Akhatwade, Nandurbar	06/02/2006
	K 407	1.25	Mandal, Nandurbar	06/03/2006
	K 412	1.25	Mandal, Nandurbar	31/12/2005
	K 413	1.25	Mandal, Nandurbar	26/03/2006
Phase-II	K 254	1.25	Dhavlivihar, Dhulia	31/03/2006
	K 118	1.25	Titane, Dhulia	29/03/2006
Phase-III	J 114	1.25	Isharde, Dhulia	13/08/2006

⁴ Commissioning certificate issued by MSEDCL

Phase	WTG Location no.	Installed Capacity (MW)	Village, District	Date of Commissioning ⁴
	J 115	1.25	Isharde, Dhulia	24/08/2006
	J 127	1.25	Isharde, Dhulia	16/08/2006
	J 128	1.25	Isharde, Dhulia	13/08/2006
		15 MW		

Table A.1.1: Commissioning dates, capacity, location number of the WTGs of project activity.

All the WTGs of the project activity are in operation from the commissioning and operating satisfactorily during the reported monitoring period.

Total emission reductions achieved in this monitoring period.

During the reported monitoring period 01/07/2012 to 31/08/2014 (First and last date included) the project activity has supplied 54,644.69 MWh of electricity, and thus contributing to the GHG reductions of 49,042 tCO₂.

A.2. Location of project activity

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a) Host Party: India

(b) State: Maharashtra

(c) City/ Town/ Community: Dhule and Nandurbar

(d) Physical/ Geographical location: GPS coordinates is provided under the below table

WTG Location No.	Village	Taluka	District	Latitude	Longitude
K 400	Mandal	Nandurbar	Nandurbar	21° 16' 15.9" N	74° 19' 49.6" E
K 401	Mandal	Nandurbar	Nandurbar	21° 16' 07.4" N	74° 19' 30.5" E
K 402	Akhatwade	Nandurbar	Nandurbar	21° 16' 12.6" N	74° 19' 07.2" E
K 407	Mandal	Nandurbar	Nandurbar	21° 16' 57.4" N	74° 19' 44.0" E
K 412	Mandal	Nandurbar	Nandurbar	21° 17' 08.1" N	74° 19' 27.7" E
K 413	Mandal	Nandurbar	Nandurbar	21° 17' 21.9" N	74° 19' 29.2" E
K 254	Dhavlivilhar	Sakri	Dhulia	21° 11' 06.1" N	74° 14' 56.2" E
K 118	Titane	Sakri	Dhulia	21° 11' 33.2" N	74° 17' 10.3" E
J 114	Isharde	Sakri	Dhulia	21° 13' 54.1" N	74° 18' 21.2" E
J 115	Isharde	Sakri	Dhulia	21° 13' 39.6" N	74° 18' 19.1" E
J 127	Isharde	Sakri	Dhulia	21° 14' 17.5" N	74° 17' 29.0" E
J 128	Isharde	Sakri	Dhulia	21° 14' 06.5" N	74° 17' 09.6" E

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 D. J. Malpani	No

A.4. Reference of applied methodology and standardized baseline

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Title : AMS-I.D. – “Grid connected renewable electricity generation” (Version 11, EB 31)⁵

⁵ http://cdm.unfccc.int/filestorage/C/D/M/CDMWF_AM_UYF1PQNDY5FZ4VH4HZ28FYAP13SI9W/AMS_I.D_rev_ver11.pdf?t=ZE18bmViMGo2fDBng9yleWrNaa2T0nEuBFOx

Reference : Appendix B of the simplified M & P for small-scale CDM project activities

A.5. Crediting period of project activity

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Crediting period from 24/10/2008 to 23/10/2018 (*Fixed*)⁶
Choice of crediting period: Fixed for 10 Years 0 Month

A.6. Contact information of responsible persons/ entities

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Name : Mr. Prafulla Khinvasara
Mobile No. : +91 9822322145
Email ID : prafulla@malpani.com

The person is also a project participant(s) in Appendix 1.

SECTION B. Implementation of project activity

B.1. Description of implemented registered project activity

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The project activity consists of twelve WTGs of Suzlon make (S 70) each having a capacity of 1.25 MW. The WTGs of the project activity are situated in Dhulia and Nandurbar district of Maharashtra. The project activity was already commissioned before the registration at UNFCCC in three phases (**Phase I**- 6 WTGs in Nandurbar Taluka in the year 2005-2006; **Phase II**- 2 WTGs in Sakri Taluka in 2006; and finally **Phase III**- 4 WTGs in Sakri Taluka also in 2006) with total installed capacity 15 MW. The commissioning date of All the WTGs of the project activity is given below.

Phase	WTG Location no.	Installed Capacity (MW)	Village, District	Date of Commissioning
Phase-I	K 400	1.25	Mandal, Nandurbar	31/12/2005
	K 401	1.25	Mandal, Nandurbar	31/12/2005
	K 402	1.25	Akhatwade, Nandurbar	06/02/2006
	K 407	1.25	Mandal, Nandurbar	06/03/2006
	K 412	1.25	Mandal, Nandurbar	31/12/2005
	K 413	1.25	Mandal, Nandurbar	26/03/2006
Phase-II	K 254	1.25	Dhavlivihear, Dhulia	31/03/2006
	K 118	1.25	Titane, Dhulia	29/03/2006
Phase-III	J 114	1.25	Isharde, Dhulia	13/08/2006
	J 115	1.25	Isharde, Dhulia	24/08/2006
	J 127	1.25	Isharde, Dhulia	13/08/2006
	J 128	1.25	Isharde, Dhulia	16/08/2006

The downtime for the project activity for the current monitoring period is mentioned in the following table:

WTGs Location No.	Unit	Downtime			Total hrs
		01/07/2012 to 31/12/2012	01/01/2013 to 31/12/2013	01/01/2014 to 31/08/2014	
K 400	hrs	247.80	298.30	305.30	11,468.80
K 401	hrs	137.90	216.20	304.80	
K 402	hrs	196.60	360.30	145.90	

⁶ <http://cdm.unfccc.int/Projects/DB/BVQI1207584460.66/view>

WTGs Location No.	Unit	Downtime		01/01/2014 to 31/08/2014	Total hrs
		01/07/2012 to 31/12/2012	01/01/2013 to 31/12/2013		
K 407	hrs	81.50	483.00	300.90	
K 412	hrs	85.50	158.20	163.20	
K 413	hrs	199.30	229.90	97.90	
K 254	hrs	136.40	284.00	987.80	
K 118	hrs	161.70	164.40	877.30	
J 114	hrs	127.00	434.80	877.20	
J 115	hrs	192.60	269.80	996.80	
J 127	hrs	155.50	164.10	654.20	
J 128	hrs	150.60	152.40	669.70	

All the WTGs are running successfully during the reported monitoring period. All the physical and technical features as stated in the registered PDD are in place and project has been operated as described in the registered PDD. There are no special events occurs during reported monitoring period.

No events or situations happened during the reported monitoring period which can alter the applicability of the applied methodology.

B.2. Post registration changes

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

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Not Applicable

B.2.2. Corrections

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Not Applicable

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

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Yes, revision of the monitoring plan has been approved on date 02/08/2010⁷

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

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Not Applicable

B.2.5. Changes to start date of crediting period

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Not Applicable

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

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Not Applicable

SECTION C. Description of monitoring system

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⁷ <http://cdm.unfccc.int/UserManagement/FileStorage/2D4E9H7SQ58PXIO0B61AGWJZTNKLCF>

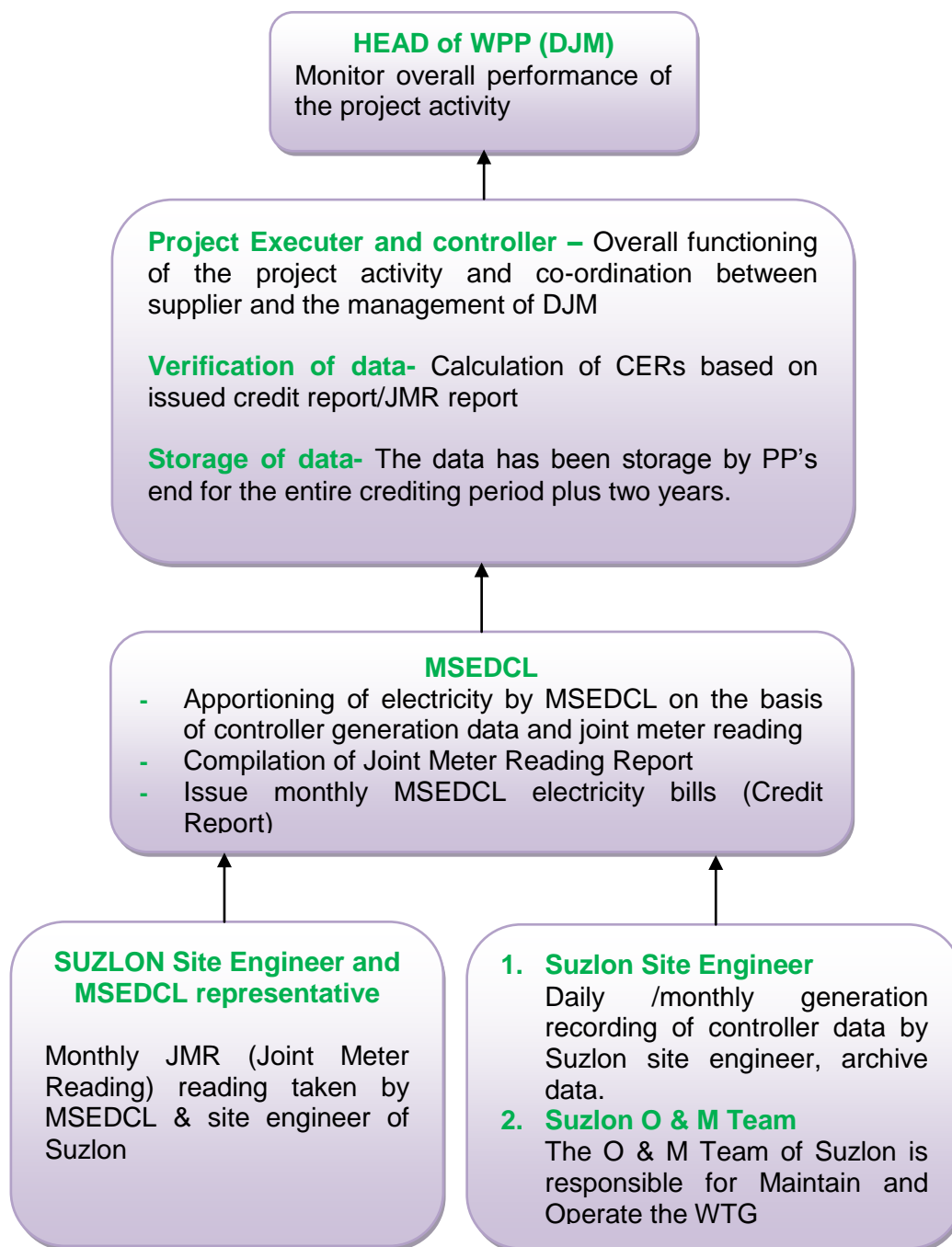
The applied small scale methodology, AMS- I.D., Version 11, requires monitoring of the electricity generated by the renewable technology, hence based on this PP has delineated a monitoring plan in section B.7.2 of the revised monitoring plan.

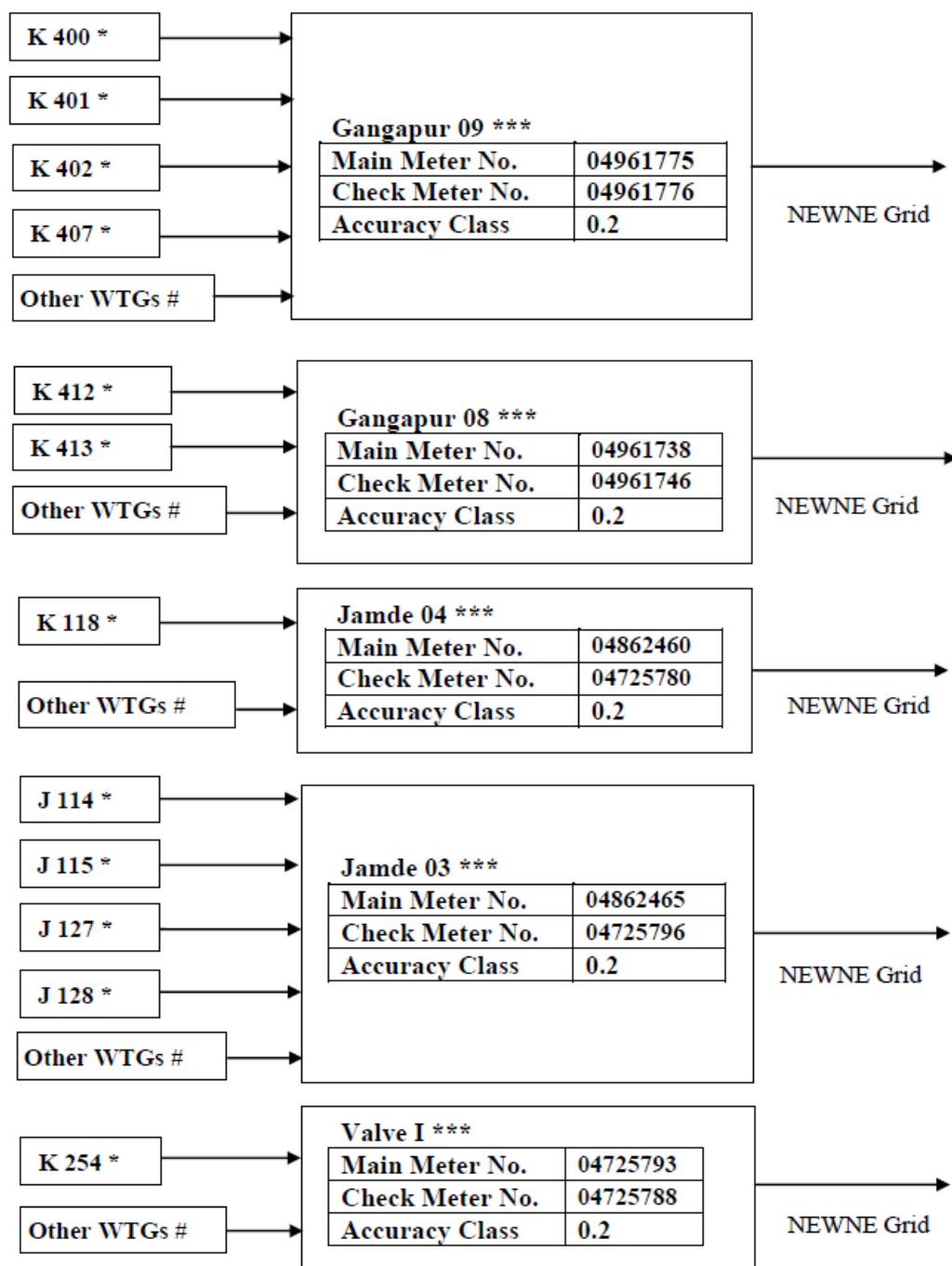
PP has signed an operation and maintenance contract with the equipment supplier i.e. Suzlon Wind farm Services Limited (SWSL). The agreement is for a period of 17 years. The performance of the turbines, safety in operation and scheduled /breakdown maintenances is responsibility of Suzlon and are organized and monitored by them. ISO 9001:2008 standard has been adopted by Suzlon, who is responsible for monitoring and O & M of the project.

The project activity involves evacuation facilities for sale to electricity to the grid and the evacuation facility is essentially maintained by the state power utility (MSEDCL). Each substation feeder is connected to a number of wind turbines i.e. PP and non-PP. There are two independent measurements of generated electricity from the wind turbines. The primary recording of the electricity fed to the state utility grid is carried out jointly at the incoming feeder of the state power utility (MSEDCL). The joint measurement is carried out once in a month in presence of both parties (the project participant's representative i.e. SEL and officials of the state power utility). Both parties sign the recorded reading. The secondary monitoring has been carried out at the individual WTGs. Each WTG is equipped with an integrated electronic meter i.e. WTG controller (panel 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 is monitored as a real-time entity at CMS.

The electricity imported from the grid and the electricity exported to the grid are measured by the MSEDCL energy meter at the metering points and are recorded on monthly basis by MSEDCL official in presence of Suzlon site engineer. The recorded details are issued as joint meter reading statement by MSEDCL. Further, the MSEDCL authorities also submit monthly credit note (based on monthly joint meter reading statement and controller data) to the project promoter based on which an invoice is raised and the payment for the sale of electricity is done by MSEDCL.

Organisation Structure, roles and responsibilities of the monitoring system:



**Legend:**

- * : Monitoring Point for the Electricity generation by WTG/s owned by DJM = $\sum_{\emptyset}^n EG_{n,y}$
- *,# : Monitoring Point for total electricity generation by all the WTGs connected to the common bulk meters = $\sum_{\emptyset}^m EG_{m,y}$
- *** : Monitoring Point EG_{MSEDCL}

Fig: Line Diagram showing all relevant monitoring point

EG_y is calculated on monthly basis by using the following equation:

$$EG_y = \left[\frac{\sum_{n=1}^n EG_{n,y}}{\sum_{m=1}^m EG_{m,y}} \right] \times EG_{MSEDCL}$$

Where

EG_y	Net Electricity exported to the grid by the Project Activity.
$\sum_{n=1}^n EG_{n,y}$	Electricity generation by WTG/s owned by DJM (either individual or group)
EG _{MSEDCL}	Total net electricity supplied to the grid measured at the substation by common bulk meters (main and check meter).
$\sum_{m=1}^m EG_{m,y}$	Total electricity generation by all the WTGs connected to the common bulk meters

For this project the feeder connections are as follows:

WTG Location No.	WTG Connected on 220 KV/33KV Feeder ⁸	Detail of Feeder Change
K 400	Jamde 15	Gangapur 09 ⁹
K 401	Jamde 08	Gangapur 09 ¹⁰
K 402	Jamde 15	Gangapur 09 ¹¹
K 407	Jamde 08	Gangapur 09 ¹²
K 412	Jamde 15	Gangapur 08 ¹³
K 413	Jamde 15	Gangapur 08 ¹⁴
K 254	Valve I	Valve I
K 118	Jamde 04	Jamde 04
J 114	Jamde 03	Jamde 03
J 115	Jamde 03	Jamde 03
J 127	Jamde 03	Jamde 03
J 128	Jamde 03	Jamde 03

For this monitoring period, there was no feeder and meter change.

Project participant has appointed a full time project in-charge to manage the overall project activity. The project in-charge supervises the functioning of the wind farm in close coordination with the officials & technical personnel of Suzlon Energy limited (SEL).

The Head-WPP of DJM receives the data which requires for the calculation of emission reductions from the project activity. The project performance is communicated to the higher management by the account department

⁸ As per the revised monitoring plan.

⁹ Feeder was changed from Jamde 15 to Gangapur 09 on dated 21 May 2009 and accordingly meter no. was updated.

¹⁰ Feeder was changed from Jamde 08 to Gangapur 09 on dated 21 May 2009 and accordingly meter no. was updated.

¹¹ Feeder was changed from Jamde 15 to Gangapur 09 on dated 21 May 2009 and accordingly meter no. was updated.

¹² Feeder was changed from Jamde 08 to Gangapur 09 on dated 21 May 2009 and accordingly meter no. was updated.

¹³ Feeder was changed from Jamde 15 to Gangapur 09 on dated 21 May 2009 and accordingly meter no. was updated.

¹⁴ Feeder was changed from Jamde 15 to Gangapur 09 on dated 21 May 2009 and accordingly meter no. was updated.

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}
Unit:	t CO ₂ /MWh
Description:	tons of CO ₂ per MWh of electricity produced by the project activity
Source of data:	CO ₂ Baseline Database for the Indian Power Sector, User Guide, Version 3.0 CEA
Value(s) applied:	0.8975
Purpose of data:	The data is used for the Baseline emission calculation
Additional comment:	This is fixed ex-ante parameter for the crediting period

D.2. Data and parameters monitored

Data / Parameter:	EG _v																																					
Unit:	MWh																																					
Description:	Net Electricity exported to the grid by the Project Activity.																																					
Measured/ Calculated / Default:	Calculated based on the measured parameters																																					
Source of data:	Joint meter reading issued by MSEDCL for promoter with the help of O & M contractor by applying logic of apportioning described in section B.7.2 of PDD.																																					
Value(s) of monitored parameter:	<table><tr><th>WTG No.</th><th>Feeder Details</th><th>Value (MWh)</th></tr><tr><td>J 114</td><td rowspan="4">Jamde 03</td><td>4,498.15</td></tr><tr><td>J 115</td><td>4,301.96</td></tr><tr><td>J 127</td><td>4,910.55</td></tr><tr><td>J 128</td><td>4,764.03</td></tr><tr><td>K 118</td><td>Jamde 04</td><td>4,399.51</td></tr><tr><td>K 254</td><td>Valve I</td><td>4,750.15</td></tr><tr><td>K 412</td><td rowspan="2">Gangapur 08</td><td>4,397.41</td></tr><tr><td>K 413</td><td>4,725.91</td></tr><tr><td>K 400</td><td rowspan="4">Gangapur 09</td><td>4,593.44</td></tr><tr><td>K 401</td><td>3,981.06</td></tr><tr><td>K 402</td><td>4,389.49</td></tr><tr><td>K 407</td><td>4,933.03</td></tr><tr><td colspan="2">EG_v (for the reported monitoring period)</td><td>54,644.69</td></tr></table>			WTG No.	Feeder Details	Value (MWh)	J 114	Jamde 03	4,498.15	J 115	4,301.96	J 127	4,910.55	J 128	4,764.03	K 118	Jamde 04	4,399.51	K 254	Valve I	4,750.15	K 412	Gangapur 08	4,397.41	K 413	4,725.91	K 400	Gangapur 09	4,593.44	K 401	3,981.06	K 402	4,389.49	K 407	4,933.03	EG _v (for the reported monitoring period)		54,644.69
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K 407		4,933.03																																				
EG _v (for the reported monitoring period)		54,644.69																																				
Monitoring equipment:	Not Applicable																																					
Measuring/ Reading/ Recording frequency:	Monthly recording																																					
Calculation method (if applicable):	<p>Taken from Joint meter reading issued by MSEDCL for promoter, however the calculation method is given below</p> <p>Net Electricity exported to the grid by the Project Activity is calculated based on the monitoring parameter- $\sum_0^n EG_{n,y}$, EGMSEDCL and $\sum_0^m EG_{m,y}$.</p> $EG_y = \left[\frac{\sum_0^n EG_{n,y}}{\sum_0^m EG_{m,y}} \right] \times EG_{MSEDCL}$ <p>The data (i.e. $\sum_0^n EG_{n,y}$ and $\sum_0^m EG_{m,y}$) measured at inbuilt control panel meter</p>																																					

	of the WTGs of the project activity and recorded by SUZLON at CMS was provided to the MSEDCL for apportioning and for calculating the net electricity exported by WTG's in Joint Meter Reading Report issued by MSEDCL.
QA/QC procedures:	The project revenue is based on the net units displaced as calculated by applying apportioning logic on the values that are monitored with the help of metering system involving common bulk meter and inbuilt control panel meter of the WTGs. The common bulk meters constitute main meter and check meter. The accuracy of the main meter and check meter has been verified by comparing with each other. The calibration of the common bulk meters (main & check meter) has been done by state utility on annual basis or as per the schedule of MSEDCL
Purpose of data:	Used for the Baseline emission calculation
Additional comment:	--

Data / Parameter:	$\sum_{i=1}^n EG_{n,y}$																																
Unit:	MWh																																
Description:	Electricity generation by WTG/s owned by DJM (either individual or group).																																
Measured/ Calculated / Default:	Measured																																
Source of data:	Source: Joint meter Reading report Monitored through inbuilt control panel meters of the WTGs. The O & M contractor further aggregates (calculates) the monitored readings to arrive at “Total electricity generation by WTGs owned by DJM”.																																
Value(s) of monitored parameter:	<table><tr><th>WTG No.</th><th>Feeder Details</th><th>Value (MWh)</th></tr><tr><td>J 114</td><td rowspan="4">Jamde 03</td><td>4,665.04</td></tr><tr><td>J 115</td><td>4,462.36</td></tr><tr><td>J 127</td><td>5,097.16</td></tr><tr><td>J 128</td><td>4,945.61</td></tr><tr><td>K 118</td><td>Jamde 04</td><td>4,584.13</td></tr><tr><td>K 254</td><td>Valve I</td><td>4,902.85</td></tr><tr><td>K 412</td><td rowspan="2">Gangapur 08</td><td>4,542.00</td></tr><tr><td>K 413</td><td>4,929.97</td></tr><tr><td>K 400</td><td rowspan="4">Gangapur 09</td><td>4,757.00</td></tr><tr><td>K 401</td><td>4,120.72</td></tr><tr><td>K 402</td><td>4,545.61</td></tr><tr><td>K 407</td><td>5,110.75</td></tr></table> $\sum_{i=1}^n EG_{n,y}$ Monthly Value of $\sum_{i=1}^n EG_{n,y}$ are provided in Annexure 01 of this Monitoring Report.	WTG No.	Feeder Details	Value (MWh)	J 114	Jamde 03	4,665.04	J 115	4,462.36	J 127	5,097.16	J 128	4,945.61	K 118	Jamde 04	4,584.13	K 254	Valve I	4,902.85	K 412	Gangapur 08	4,542.00	K 413	4,929.97	K 400	Gangapur 09	4,757.00	K 401	4,120.72	K 402	4,545.61	K 407	5,110.75
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K 401		4,120.72																															
K 402		4,545.61																															
K 407		5,110.75																															
Monitoring equipment:	Monitored through inbuilt WTG Controller meter. The inbuilt control panel meters are of accuracy class 0.2 The inbuilt control panel meter is not possible to calibrate (as per detailed description under “Description of calibration of WTG Controller” in section B.7.2 of the revised monitoring plan).																																
Measuring/ Reading/ Recording frequency:	The electricity generated by the WTGs of DJM is monitored with the help of inbuilt control panel meters installed on all the WTGs. The data is continuously measured at each WTG by inbuilt control panel meter and recorded at CMS maintained by O & M contractor																																
Calculation method (if applicable):	Not Applicable																																

QA/QC procedures:	The inbuilt controller meter is of accuracy class of 0.2.
Purpose of data:	Used for the Calculation of EG_y (Baseline Calculation)
Additional comment:	--

Data / Parameter:	$\sum_{\theta}^m EG_{m,y}$												
Unit:	MWh												
Description:	Total electricity generation by all the WTGs connected to the common bulk meters.												
Measured/ Calculated / Default:	Measured												
Source of data:	Source: Joint meter Reading report Monitored through inbuilt control panel meters of the WTGs. The O & M contractor further aggregates (calculates) the monitored readings to arrive at "Total electricity generation by all the WTGs connected to the common bulk meter".												
Value(s) of monitored parameter:	<table border="1"> <thead> <tr> <th>Feeder Details</th><th>Measured Value (MWh)</th></tr> </thead> <tbody> <tr> <td>All WTG connected to Jamde 03</td><td>79,979.46</td></tr> <tr> <td>All WTG connected to Jamde 04</td><td>68,956.88</td></tr> <tr> <td>All WTG connected to Valve I</td><td>79,582.31</td></tr> <tr> <td>All WTG connected to Gangapur 08</td><td>76,439.97</td></tr> <tr> <td>All WTG connected to Gangapur 09</td><td>70,293.59</td></tr> </tbody> </table> $\sum_{\theta}^n EG_{n,y}$ Monthly Value of $\sum_{\theta}^n EG_{n,y}$ are provided in Annexure 01 of this Monitoring Report.	Feeder Details	Measured Value (MWh)	All WTG connected to Jamde 03	79,979.46	All WTG connected to Jamde 04	68,956.88	All WTG connected to Valve I	79,582.31	All WTG connected to Gangapur 08	76,439.97	All WTG connected to Gangapur 09	70,293.59
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All WTG connected to Gangapur 09	70,293.59												
Monitoring equipment:	Monitored through inbuilt WTG Controller meter. The inbuilt control panel meters are of accuracy class 0.2 The inbuilt control panel meter is not possible to calibrate (as per detailed description under "Description of calibration of WTG Controller" in section B.7.2 of the revised monitoring plan).												
Measuring/ Reading/ Recording frequency:	The electricity generated by all the WTGs (including WTGs of DJM) is monitored with the help of inbuilt control panel meters installed on all WTGs (which are connected to common bulk meters i.e. main meter & check meter). The data is continuously measured at each WTG by inbuilt control panel meter and recorded at CMS. However access to this reading for WTGs other than that of DJM is not available and the reading are directly reflected in the JMR which is issued by MSEDCL on monthly basis.												
Calculation method (if applicable):	Not Applicable												
QA/QC procedures:	The inbuilt controller meter is of accuracy class of 0.2.												
Purpose of data:	Used for the Calculation of EG_y (Baseline Calculation)												
Additional comment:	--												

Data / Parameter:	EG_{MSEDCL}
Unit:	MWh
Description:	Total net electricity supplied to the grid measured at the substation by common bulk meters (main and check meter).
Measured/ Calculated /	Calculated

Default:													
Source of data:	<p>Source: Joint meter reading report.</p> <p>This parameter is calculated by subtracting imported electricity from the exported electricity to grid and monitored with the help of bulk meters.</p>												
Value(s) of monitored parameter:	<table border="1"> <thead> <tr> <th>Feeder Details</th> <th>Measured Value (MWh)</th> </tr> </thead> <tbody> <tr> <td>Jamde 03</td> <td>77,076.19</td> </tr> <tr> <td>Jamde 04</td> <td>66,162.90</td> </tr> <tr> <td>Valve I</td> <td>77,068.29</td> </tr> <tr> <td>Gangapur 08</td> <td>73,913.84</td> </tr> <tr> <td>Gangapur 09</td> <td>67,872.09</td> </tr> </tbody> </table>	Feeder Details	Measured Value (MWh)	Jamde 03	77,076.19	Jamde 04	66,162.90	Valve I	77,068.29	Gangapur 08	73,913.84	Gangapur 09	67,872.09
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Gangapur 09	67,872.09												

Monitoring equipment:					
Feeder	Meter (Main Meter / Check Meter)	Meter Details	Date of Calibration	Calibration frequency	Validity
Jamde 03	Main Meter	Serial No. 04862465 Type: Tri Vector Accuracy Class: 0.2	17/09/2011 25/09/2012 29/06/2013 05/06/2014	Yearly	One year
	Check Meter	Serial No. 04725796 Type: Tri Vector Accuracy Class: 0.2	17/09/2011 25/09/2012 29/06/2013 05/06/2014	Yearly	One year
Jamde 04	Main Meter	Serial No. 04862460 Type: Tri Vector Accuracy Class: 0.2	17/09/2011 25/09/2012 29/06/2013 05/06/2014	Yearly	One year
	Check Meter	Serial No. 04725780 Type: Tri Vector Accuracy Class: 0.2	17/09/2011 25/09/2012 29/06/2013 05/06/2014	Yearly	One year
Valve I	Main Meter	Serial No. 04725793 Type: Tri Vector Accuracy Class: 0.2	17/09/2011 04/10/2012 12/08/2013 07/06/2014	Yearly	One year
	Check Meter	Serial No. 04725788 Type: Tri Vector Accuracy Class: 0.2	17/09/2011 04/10/2012 12/08/2013 07/06/2014	Yearly	One year
Gangapur 08	Main Meter	Serial No. 04961738 Type: Tri Vector Accuracy Class: 0.2	17/09/2011 04/10/2012 06/08/2013 17/06/2014	Yearly	One year
	Check Meter	Serial No. 04961746 Type: Tri Vector Accuracy Class: 0.2	17/09/2011 04/10/2012 06/08/2013 17/06/2014	Yearly	One year
Gangapur 09	Main Meter	Serial No. 04961775 Type: Tri Vector Accuracy Class: 0.2	17/09/2011 04/10/2012 06/08/2013 17/06/2014	Yearly	One year
	Check Meter	Serial No. 04961776 Type: Tri Vector Accuracy Class: 0.2	17/09/2011 04/10/2012	Yearly	One year

		Type: Tri Vector Accuracy Class: 0.2	06/08/2013 17/06/2014		
Measuring/ Reading/ Recording frequency:	Monthly recording				
Calculation method (if applicable):	Net export from all the WEGs is calculated by subtracting import from the export. Export and import of electricity is continuously measured at the common bulk meters (i.e. main meter & check meter). The readings at the common bulk meter will be taken on a monthly basis, in presence of the representative of MSEDCL & O & M contractor (PP's representative).				
QA/QC procedures:	The common bulk meters constitute main meter and check meter. The meters are of accuracy class 0.2. The accuracy of the main meter and check meter has been verified by comparing with each other. The calibration of the common bulk meters (main & check meter) has been done by state utility on annual basis or as per the schedule of MSEDCL.				
Purpose of data:	Used for the Calculation of EG_y (Baseline Calculation)				
Additional comment:	--				

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**

>>

The baseline emission is calculated as:

$$BE_y = EG_y * EF_y$$

Where,

BE_y	=	Baseline Emissions due to displacement of electricity during the year y (in tons of CO_2)
EG_y	=	Net units of electricity due to substituted in the grid during the year y (in MWh)
EF_y	=	Emission Factor of the grid (in tCO_2/MWh) and y is any year within the crediting period of the project activity

Total Baseline Emission for the Monitoring Period of 01/07/2012 to 31/08/2014 (First and last date included) as follows:

Period	Net Generation from all the WEGs (MWh)	Emission Factor of the grid (tCO_2/MWh)	Baseline Emission (tCO_2e)
	$EG_{(Net\ export\ by\ project\ activity)}$	EF_y	BE_y
01/07/2012 to 31/12/2012	10,897.71	0.8975	9,780.69
01/01/2013 to 31/12/2013	25,061.31	0.8975	22,492.53
01/01/2014 to 31/08/2014	18,685.67	0.8975	16,770.39
Total	54,644.69		49,042 (Round down)

Note: As per CLEAN DEVELOPMENT MECHANISM VALIDATION AND VERIFICATION MANUAL, Emission Reduction has now been calculated for the monitoring period 01/07/2012 to 31/08/2014 (inclusive of both days).

As JMR of the month August 2014 is up to 01/09/2014 and hence, for WEGs J114, J115, J127, J128, K118, K254, K412, K413, K400, K401, K402 and K407 the daily generation (controller data) for 01/09/2014 is now deducted from the electricity supplied to the grid for the month August 2014.

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

>>

The leakage emission for the project activity is considered as Zero.

Hence, $Ly = 0$

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 ₂ e)	Project emissions or actual net GHG removals by sinks (t CO ₂ e)	Leakage (t CO ₂ e)	Emission reductions or net anthropogenic GHG removals by sinks (t CO ₂ e)
Total	49,042	0	0	49,042

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 ₂ e)	$(25,848 * (792/365)) = 56,087 \text{ tCO}_2$	49,042

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 ₂ e)	9,780	39,262

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

Project participant and/or responsible person/ entity	<input checked="" type="checkbox"/> Project participant <input checked="" type="checkbox"/> Responsible person/ entity for completing the CDM-MR-FORM
Organization name	M/s D. J. Malpani
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Website	
Contact person	
Title	Purchase Manager
Salutation	Mr.
Last name	Khinvasara
Middle name	-
First name	Prafulla
Department	Purchase
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Direct tel.	--
Personal e-mail	prafulla@malpani.com

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
04.0	25 June 2014	Revisions to: <ul style="list-style-type: none"> • Include the Attachment: Instructions for filling out the monitoring report form (these instructions supersede the "Guideline: Completing the monitoring report form" (Version 04.0)); • Include provisions related to standardized baselines; • Add contact information on a responsible person(s)/ entity(ies) for completing the CDM-MR-FORM in A.6 and Appendix 1; • Change the reference number from <i>F-CDM-MR</i> to <i>CDM-MR-FORM</i>; • Editorial improvement.
03.2	5 November 2013	Editorial revision to correct table in page 1.
03.1	2 January 2013	Editorial revision to correct table in section E.5.

<i>Version</i>	<i>Date</i>	<i>Description</i>
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		