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	Grid Connected Wind Power Project by M/s. D. J. Malpani in Rajasthan
Reference number of the project activity	5794
Version number of the monitoring report	01
Completion date of the monitoring report	07/08/2014
Registration date of the project activity	14/02/2012
Monitoring period number and duration of this monitoring period	Monitoring period number: 01 Duration of this monitoring period: 01/03/2012 - 31/03/2014
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 : 01 Energy Industries (renewable - /non-renewable sources) Selected methodology(ies): AMS-ID Version 16
Estimated amount of GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period in the registered PDD	28,430 tCO2e
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period	20,324 tCO2e
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period up to 31 December 2012(if applicable)	10,318 tCO2e
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period from 1 January 2013 onwards (if applicable).	10,006 tCO2e

SECTION A. Description of project activity

A.1. Purpose and general description of project activity

Purpose of the project activity and the measures taken for GHG emission reductions or net anthropogenic GHG removals by sinks:

The project activity is grid-connected wind power generation in District- Jaisalmer, State- Rajasthan in India. M/s D. J. Malpani is the owner and developer of the project activity. The total capacity of the project activity is 7.5 MW (5 WTGs × 1.50 MW). The project activity employs Wind Turbine Generators (WTGs) of Class S-82 manufactured by M/s. Suzlon Energy Limited.

The project activity is supplying the generated electricity to NEWNE Grid of India.

The purpose of the project activity is generation of clean electricity by utilizing kinetic energy of wind. The project activity is estimated to generate 14,374 MWh of electricity annually; with estimated emission reductions of 13,636 tCO_2e / annum for the entire crediting period of 7 years.

Brief description of the installed technology and equipment;

The total capacity of the project activity is 7.5 MW (5 WTGs × 1.50 MW). The project activity employs Wind Turbine Generators (WTGs) of Class S-82 manufactured by M/s. Suzlon Energy Limited.

Technical specifications for Class S-82[1]:

1.	**Main Data**	
	Turbine type	Horizontal axis turbine
	Rated Power	1500 kW
	Rotor Diameter	82 m
	Hub height (including foundation)	Approximately 78.5 m
	Rotational Speed	15.6 to 18.4 rpm
2.	**Rotor**	
	Number of rotor blades	3
	Rotor Orientation	Upwind
	Material	Epoxy bonded fiber glass
3.	**Gear Box**	
	Type of Gear Box housing	One planetary stage / Two helical stages
	Ratio	1: 95.09
	Power	1650 kW
	Type of cooling	Forced oil cooling lubrication system
4.	**Generator System**	
	Generator type	Single speed induction generator with slip rings, variable rotor resistance via Suzlon Flexi slip system
	Rated power	1500 kW
	Speed at rated power	1511 rpm
	Rated voltage	690 V AC (phase to phase)
	Frequency	50 Hz
	Insulation Class	Class H
5.	**Tower**	
	Tower type	Tubular tower (corrosion proof painting on inner and outer surface) with welded steel plates
	Tower Height	76 m
6.	**Operational Parameters**	

[1] Suzlon S-82 Brochure - http://www.suzlon.com/products/l2.aspx?l1=2&l2=8

	Cut-in wind speed	4 m/s
	Rated wind speed	14 m/s
	Cut-off wind speed	20 m/s
	Survival wind speed	52.5 m/s

The project technology is indigenous & no technology transfer is involved.

Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.):

The project activity has been commissioned & running successfully. The details are given below:

Sr. No.	Loc. No.	Capacity, MW	Village	Commissioning date
1.	AK-278	1.5	Sangana	30/03/2011
2.	AK-283	1.5	Asayach	21/03/2011
3.	AK-262	1.5	Chord	30/03/2011
4.	AK-321	1.5	Chord	30/03/2011
5.	AK-331	1.5	Asayach	21/03/2011

Total GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period:

The project activity has exported 21,424 MWh of electricity to the NEWNE Grid during the monitoring period under consideration i.e. 01/03/2012 to 31/03/2014 (including both days). This has helped in mitigating 20,324 tCO_2e during the same period.

A.2. Location of project activity

Host Party(ies): India

Region/ State/ Province, etc.: Rajasthan

City/ Town/ Community, etc.: Taluka: Fatehgarh & Jaisalmer, District: Jaisalmer

Physical/ Geographical location:

The project activity is located in District- Jaisalmer, State- Rajasthan in India. The details of project location are given below:

Sr. No.	Location No.	Khasra No.	Village	Taluka	Latitude	Longitude
1.	AK-278	83/P, 76/P	Sangana	Fatehgarh	N 26°47’48.7”	E 71°08’12.6”
2.	AK-283	147/P	Asayach	Jaisalmer	N 26°48’54.9”	E 71°07’04.6”
3.	AK-262	370/P	Chord	Fatehgarh	N 26°45’32.0”	E 71°09’49.3”
4.	AK-321	310/P	Chord	Fatehgarh	N 26°47’36.7”	E 71°10’15.8”
5.	AK-331	94/P	Asayach	Jaisalmer	N 26°49’45.3”	E 71°07’59.6”

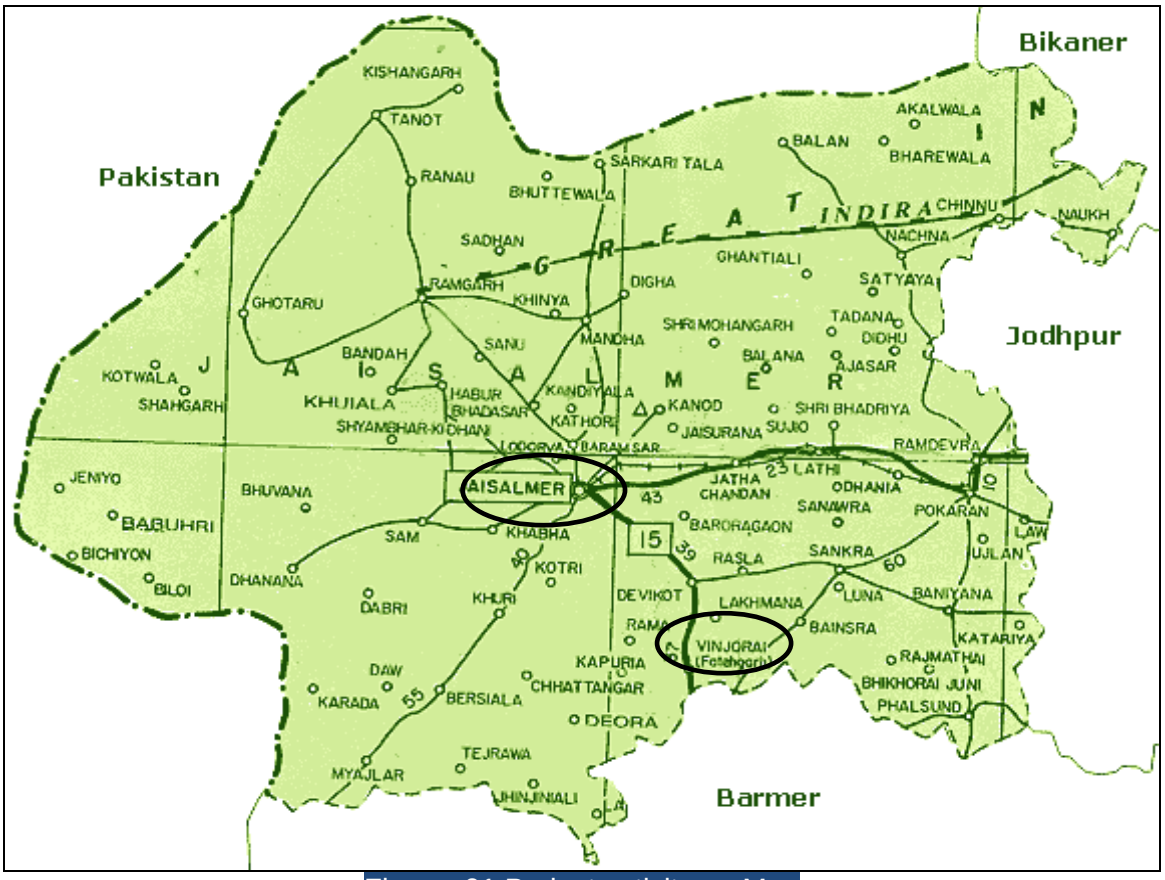

Figure: 01 Project activity on Map

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	M/s D. J. Malpani (Private entity)	No

A.4. Reference of applied methodology and standardized baseline

Title of methodology : Grid connected renewable electricity generation
Reference : AMS- I.D.
Version number : 16[2]

Additionally the project has referred:

- Tool to calculate the emission factor for an electricity system (Version- 02.2.1 , EB- 63, Annex-19)[3]

A.5. Crediting period of project activity

Type of crediting period: Renewable
Start date of crediting period: 01/03/2012
Length of crediting period: 07 years

A.6. Contact information of responsible persons/ entities

Contact Information of responsible persons / entities:

Kishor Deshmukh
Chief Consultant I Energy & Carbon Services
MITCON Consultancy & Engineering Services Ltd.
Agriculture College Campus I Next to DIC Office I Shivajinagar I Pune - 411 005 I Maharashtra I INDIA I Mobile : +91-98234 98582 I Skype : kishor.deshmukh
Email : kishor.deshmukh@mitconindia.com I homepage : www.mitconindia.com

Note: MITCON Consultancy & Engineering Services Ltd. is not the project participant in mentioned in Appendix 1 below.

SECTION B. Implementation of project activity

B.1. Description of implemented registered project activity

Information on the implementation and actual operation of the project activity:

The project activity has been commissioned & running successfully. The details are given below:

Sr. No.	Loc. No.	Capacity, MW	Village	Commissioning date
1.	AK-278	1.5	Sangana	30/03/2011
2.	AK-283	1.5	Asayach	21/03/2011
3.	AK-262	1.5	Chord	30/03/2011
4.	AK-321	1.5	Chord	30/03/2011
5.	AK-331	1.5	Asayach	21/03/2011

[2] http://cdm.unfccc.int/UserManagement/FileStorage/SJI52M6QXGKFNOZABTHDYPU789EV3C
[3] http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v2.2.1.pdf

No phased implementation involved.

Brief description of the installed technology and equipment;

The total capacity of the project activity is 7.5 MW (5 WTGs × 1.50 MW). The project activity employs Wind Turbine Generators (WTGs) of Class S-82 manufactured by M/s. Suzlon Energy Limited.

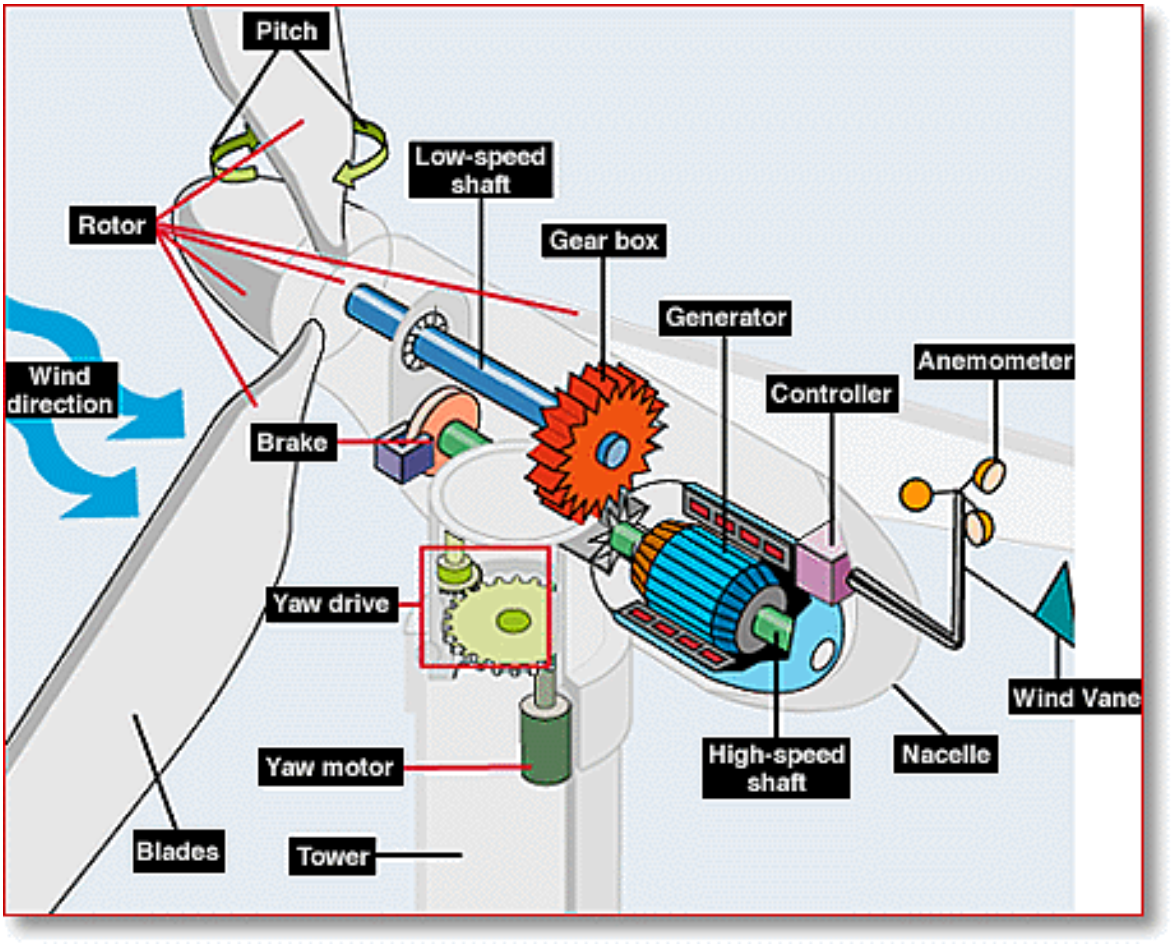

Figure 02: Major Mechanical Parts of a Wind Turbine (indicative)

Technical specifications for Class S-82[4]:

1.	**Main Data**	
	Turbine type	Horizontal axis turbine
	Rated Power	1500 kW
	Rotor Diameter	82 m
	Hub height (including foundation)	Approximately 78.5 m
	Rotational Speed	15.6 to 18.4 rpm
2.	**Rotor**	
	Number of rotor blades	3
	Rotor Orientation	Upwind
	Material	Epoxy bonded fiber glass
3.	**Gear Box**	
	Type of Gear Box housing	One planetary stage / Two helical stages
	Ratio	1: 95.09

[4] Suzlon S-82 Brochure - http://www.suzlon.com/products/l2.aspx?l1=2&l2=8

	Power	1650 kW
	Type of cooling	Forced oil cooling lubrication system
4.	**Generator System**	
	Generator type	Single speed induction generator with slip rings, variable rotor resistance via Suzlon Flexi slip system
	Rated power	1500 kW
	Speed at rated power	1511 rpm
	Rated voltage	690 V AC (phase to phase)
	Frequency	50 Hz
	Insulation Class	Class H
5.	**Tower**	
	Tower type	Tubular tower (corrosion proof painting on inner and outer surface) with welded steel plates
	Tower Height	76 m
6.	**Operational Parameters**	
	Cut-in wind speed	4 m/s
	Rated wind speed	14 m/s
	Cut-off wind speed	20 m/s
	Survival wind speed	52.5 m/s

The project technology is indigenous & no technology transfer is involved.

Description of the events or situations that occurred during the monitoring period that may impact the applicability of the applied methodology and, where applicable, the applied standardized baseline

There are no events or situations that occurred during the monitoring period that impacted the applicability of the applied methodology.

How the issues resulting from these events or situations have been addressed.

There are no events or situations that occurred during the monitoring period that impacted the applicability of the applied methodology.

PP confirms that there are no changes to the registered CDM project activity.

B.2. Post registration changes

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

No temporary deviations have been applied during this monitoring period.

B.2.2. Corrections

No corrections to project information or parameters fixed at validation have been approved during this monitoring period or submitted with this monitoring report

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

No permanent changes from the registered monitoring plan, applied methodologies have been approved during this monitoring period or submitted with this monitoring report.

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

No changes to the project design of the project activity have been approved during this monitoring period or submitted with this monitoring report.

B.2.5. Changes to start date of crediting period

No changes to the start date of the crediting period have been approved during this monitoring period or submitted with this monitoring report.

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

This section left intentionally blank.

SECTION C. Description of monitoring system

The monitoring of the project activity is given as below:

- The electricity generated by the project activity WTGs is evacuated to the pooling station at 33 kV/220 kV level. The project activity WTGs along with other WTGs, are connected to the feeder-wise metering point/s, where each metering point consists of both main & check meters. These tri vector energy meters are having accuracy class of 0.2s.
- The joint meter reading is taken on monthly basis at these metering point/s by the representatives of PP & State Utility, which records parameters like export, import.
- All these metering points are further connected to the common delivery point at the 220 kV level.
- The common metering point at 220 kV GSS concurrently records total electricity (total export and total import) received from all connected metering points. The common metering point consists of both main & check meters. These energy meters are having accuracy class of 0.2s. The monthly JMR is taken by the representative of PP & State Utility.
- Billing of the energy is being done based on the energy break up available at the metering at 220 kV level.
- The monitoring & measurement of electricity is being done on continuous basis; while recording is done on monthly basis as Joint Meter Reading by the representatives of State Utility & PP.
- The value of monthly export by the project activity along with import and net export is recorded in the monthly Break up of net export units report.
- The values of monthly export & import by the project activity recorded in the monthly Break up of net export units report is calculated based on the apportioning method by the state utility.
- The meters shall be approved, tested & sealed by the State Utility. The meters are in the custody of State Utility. The calibration of the meters is carried out by State Utility.
- The calibration of the meters is carried out at least once in three years (as per paragraph 17 (c) of General Guidelines to SSC CDM methodologies, Version 17). In the absence of the meter calibration— Guidelines for Assessing Compliance with the Calibration Frequency Requirements will be applied appropriately to confirm the conservativeness of metering and emission reductions.
- The net electricity supplied to the grid is converted to MWh for calculation of emission reductions.
- Data will be archived in electronic form for two years after the end of crediting period or of the last issuance of CERs for this project activity, whichever occurs later.
- The PP is responsible for data collection & archiving.

Sample Apportioning Procedure:

The apportioning of the electricity is the responsibility of the State Utility. The sample apportioning procedure adopted for any given WTG for any given month is given below:

Generation Ratio at metering point (33 kV/220 kV level GSS):

The generation ratio is the ratio of electricity generated by installed WTG of PP to the total generation by all the connected WTGs to the applicable metering point.

$$G_{R,\text{ metering point}} = EG_{\text{Controller, WTG}} / EG_{\text{Controller, metering point}} \quad \text{(a)}$$

Where:

$G_{R,\text{ metering point}}$: Generation Ratio at metering point
$EG_{\text{Controller, WTG}}$: Electricity generated by installed WTG of PP connected to the applicable metering point
$EG_{\text{Controller, metering point}}$: Total generation by all the connected WTGs to the applicable metering point

Calculation of net electricity exported at applicable metering point:

The Main and Check meters at the applicable metering point measures number of parameters including export and import for all the connected WTGs.

The import, kWh by the WTG at the metering point is calculated in the following manner:

$$EG_{\text{Import, metering point}} = G_{R,\text{ metering point}} \times EG_{\text{Total Import, metering point}} \quad \text{(b)}$$

Where:

$EG_{\text{Import, metering point}}$: Import, kWh by the WTG at the metering point
$G_{R,\text{ metering point}}$: Generation Ratio at metering point
$EG_{\text{Total Import, metering point}}$: Total Import, kWh by all the WTGs at the metering point

The export, kWh by the WTG at the metering point is calculated in the following manner:

$$EG_{\text{Export, metering point}} = G_{R,\text{ metering point}} \times EG_{\text{Total Export, metering point}} \quad \text{(c)}$$

Where:

$EG_{\text{Export, metering point}}$: Export, kWh by the WTG at the metering point
$G_{R,\text{ metering point}}$: Generation Ratio at metering point
$EG_{\text{Total Export, metering point}}$: Total Export, kWh by all the WTGs at the metering point

The net electricity exported by the WTG at the 33 kV/220 kV level metering point is calculated by subtracting equation (b) from (c).

Thus, the net electricity exported at 33 kV/220 kV level metering point

$$= EG_{\text{Export, metering point}} - EG_{\text{Import, metering point}} \quad \text{(d)}$$

Transmission Loss Calculation:

The total transmission loss occurred during export of the electricity between the 33/220 kV level pooling station & 220 kV level common delivery point is calculated as the difference between total aggregated reading of export for all metering points at 33/220 kV level and the total reading of

export for same metering points recorded at the 220 kV level. Similarly transmission loss occurred during import of the electricity is also calculated.

The PP/WTG wise transmission loss during export & import is calculated by multiplying the values of arrived transmission loss for export & import for wind farm with the *Generation Ratio at common delivery point.*

Generation Ratio at common delivery point:

It is the ratio of electricity generated by installed WTG to the total generation by all the connected WTGs/ or connected metering points under common delivery point.

$$G_{R,\ Common\ Delivery\ Point} = EG_{Controller,\ WTG} / EG_{Controller,\ Common\ Delivery\ Point} \quad (e)$$

Where:

$G_{R,\ Common\ Delivery\ Point}$	:	Generation Ratio at common delivery point
$EG_{Controller,\ WTG}$	:	Electricity generated by installed WTG
$EG_{Controller,\ Common\ Delivery\ Point}$	:	Total generation by all the connected WTGs/ or connected metering points under common delivery point

Calculation of net electricity delivered to the Grid:

The values of transmission loss during export & import for the given WTG are subtracting from $EG_{Export,\ metering\ point}$ & $EG_{Import,\ metering\ point}$ respectively to get the values of export and import respectively for the given month.

The net electricity delivered to the Grid by the given WTG for the given month (net export kWh) is then obtained by subtracting import from export. Thus,

$$= \textbf{Export – Import} \quad (f)$$

These apportioned values viz import, export and net export kWh can be referred from the *Monthly Break up of net export units report.*

Operational & Management Structure:

Sr. No.	Monitoring Team	Responsibility
1	Project Head	• Overall project management • Project execution • Review of project operations • Review of generation & achieved emission reductions by project • Liaisoning with Consultant/Suzlon
2	Project Coordinator	• Data Archival (electronic) • Site visit for actual project monitoring Storage of data • Coordination with O & M Contractor for day to-day operations • Coordination with Suzlon for regular calibration of meters • Reporting to Project Head • Online project monitoring • Feedback and corrective action wherever necessary
3	O & M Contractor (Suzlon)	• Compliance as per O & M Agreement with the PP

Indicative line diagram displaying the GHG collection and management system:

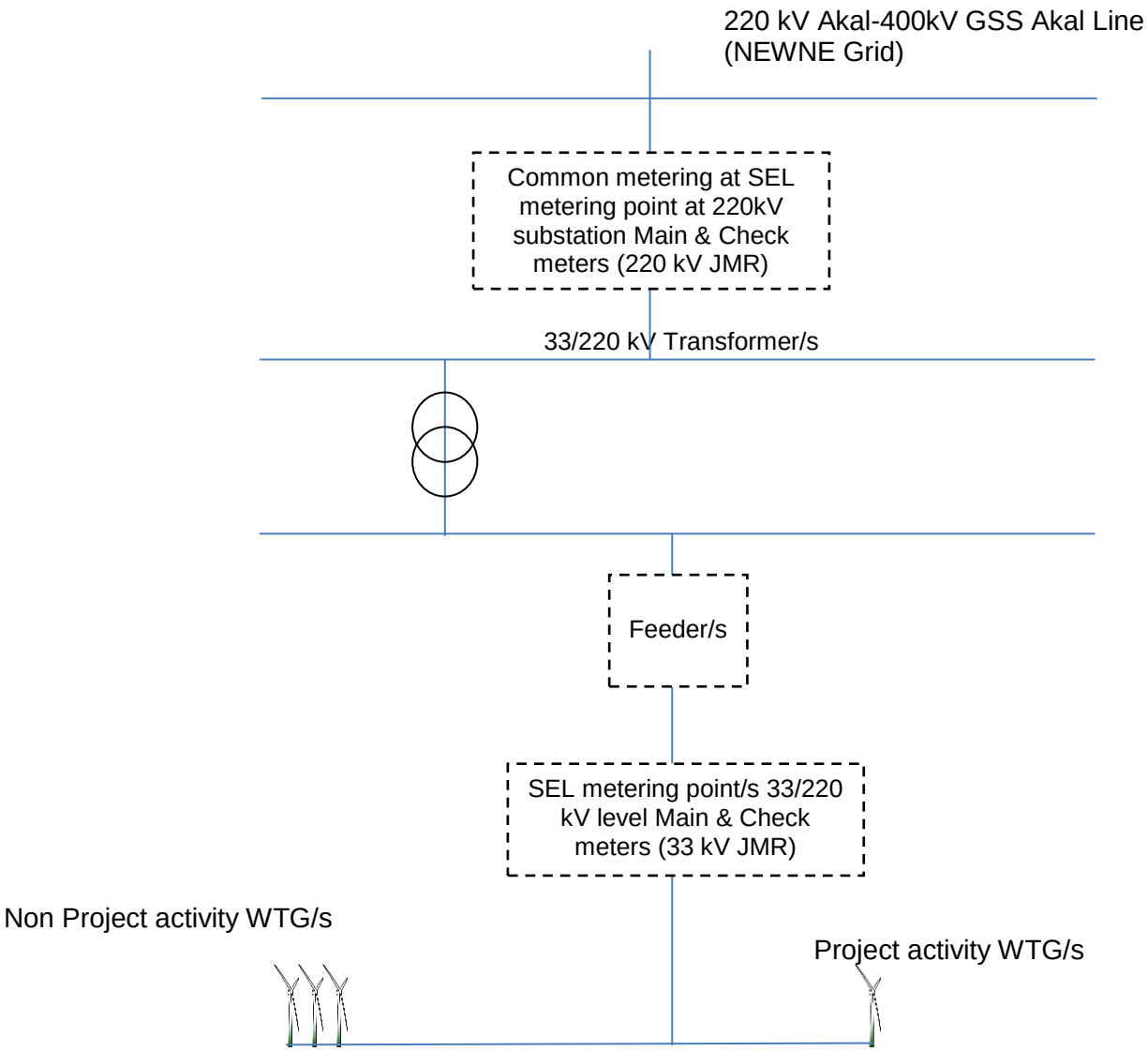

Figure 03: Indicative line diagram with location of metering equipment

SECTION D. Data and parameters

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

Data / Parameter:	$EF_{CO2,grid,y}$
Unit:	tCO_2/ MWh
Description:	Combined margin CO_2 emission factor for the project electricity system.
Source of data:	CEA CO_2 Baseline Database (Version- 6.0, Date- March 2011). The value is calculated for year 2007-08, 2008-09 & 2009-10.
Value(s) applied):	0.9487
Purpose of data:	Baseline emission calculations
Additional comment:	The calculation is done as *ex ante.*

Data / Parameter:	$EF_{grid, OM, y}$
Unit:	tCO_2/ MWh
Description:	Operating margin CO_2 emission factor for the project electricity system.

Source of data:	CEA CO_2 Baseline Database (Version- 6.0, Date- March 2011). The value is calculated for year 2007-08, 2008-09 & 2009-10.
Value(s) applied):	0.9942
Purpose of data:	Baseline emission calculations
Additional comment:	The calculation is done as *ex ante.*

Data / Parameter:	$EF_{grid, BM, y}$
Unit:	tCO_2/ MWh
Description:	Build margin CO_2 emission factor for the project electricity system.
Source of data:	CEA CO_2 Baseline Database (Version- 6.0, Date- March 2011). The value is calculated for year 2009-10.
Value(s) applied):	0.8123
Purpose of data:	Baseline emission calculations
Additional comment:	The calculation is done as *ex ante.*

D.2. Data and parameters monitored

Data / Parameter:	$EG_{BL,y}$
Unit:	MWh/y
Description:	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y
Measured/ Calculated / Default:	**Metering at 33 kV/220 kV level:** The electricity generated by the project activity WTG/s is evacuated to the pooling station at 33 kV/220 kV level. The project activity WTG/s along with other WTGs, are connected to the feeder-wise metering point/s, where each metering point consists of both main & check meters. These tri vector energy meters are having accuracy class of 0.2s. The joint meter reading is taken on monthly basis at these metering point/s by the representatives of PP & State Utility, which records parameters like export, import. The electricity (export and import) for the connected WTG/s is apportioned on monthly basis by the State Utility at 33 kV/220 kV level on the basis of generation ratio at the applicable metering point (ratio of controller reading of connected WTG to the controller reading for all WTGs connected to the applicable metering point) and the electricity (export, import etc) recorded by the energy meters at 33 kV/220 kV GSS on monthly basis. It gives export kWh & import kWh for connected WTG. The net export obtained at 33 kV/220 kV level for any given month for the connected WTG is then obtained by: Net Export = Export kWh – Import kWh All these metering points are further connected to the common delivery point at the 220 kV level. **Metering at 220 kV level:** The common metering point at 220 kV GSS *concurrently* records total electricity (total export and total import) receiving from all connected metering points. The common metering point consists of both main & check meters. These energy meters are having accuracy class of 0.2s. The monthly JMR is taken by the representative of PP & State Utility. Billing of the energy is being done based on the energy break up available at the metering at 220 kV level.

	Transmission loss: The total transmission loss occurred during export of the electricity between the 33/220 kV level pooling station & 220 kV level common delivery point is calculated as the difference between total aggregated reading of exports for all metering points at 33/220 kV level and the total reading of exports for same metering points recorded at the 220 kV level. Similarly, transmission loss occurred during import of the electricity is also calculated. The PP/WTG wise transmission loss during export & import is calculated by multiplying the values of arrived transmission loss for export & import for wind farm with the *Generation Ratio at common delivery point* (ratio of electricity generated by installed WTG to the total generation by all the connected WTGs/ or connected metering points under common delivery point). The values of transmission loss during export & import for the given WTG are subtracting from $EG_{Export, metering\ point}$ & $EG_{Import, metering\ point}$ respectively to get the values of export and import respectively for the given month. **Net electricity delivered to the Grid:** The net electricity delivered to the Grid by the given WTG for the given month (net export kWh) is then obtained by subtracting import from export. The values of the net electricity delivered to the Grid are aggregated annually to get $EG_{BL,y}$. The value of net electricity delivered to the Grid ($EG_{BL,y}$) by the project activity per annum is converted to MWh before the calculation of emission reductions.
Source of data:	Monthly *Break up of net export units* report
Value(s) of monitored parameter:	21,424 MWh[5]

[5] Please refer excel spreadsheet

Monitoring equipment:	The details of the project activity metering equipment are given below: **WTGs: AK-278 & AK-283** **Metering arrangements: SEL – 77** **Type:** Trivector meters **Accuracy Class:** 0.2s **Main meter no.:** MSB10307 **Check meter no.:** MSB10309 **Calibration frequency:** Once in three years **Date of last calibration:** 12/03/2011[6] **Validity:** 11/03/2014 **Result:** % error – within permissible limit **Metering arrangements: SEL – 77** **Type:** Trivector meters **Accuracy Class:** 0.2s **Main meter no.:** MSB10307 **Check meter no.:** MSB10309 **Calibration frequency:** Once in three years **Date of last calibration:** 15/03/2012[7] **Validity:** 14/03/2015 **Result:** % error – within permissible limit **WTGs: AK-331** **Metering arrangements: SEL – 102** **Type:** Trivector meters **Accuracy Class:** 0.2s **Main meter no.:** RJB72835 **Check meter no.:** RJB72836 **Calibration frequency:** Once in three years **Date of last calibration:** 15/12/2010[8] **Validity:** 14/12/2013 **Result:** % error – within permissible limit **Metering arrangements: SEL – 102** **Type:** Trivector meters **Accuracy Class:** 0.2s **Main meter no.:** RJB72835 **Check meter no.:** RJB72836 **Calibration frequency:** Once in three years **Date of last calibration:** 15/03/2012[9] **Validity:** 14/03/2015 **Result:** % error – within permissible limit **WTGs: AK-262 & AK-321** **Metering arrangements: SEL – 109** **Type:** Trivector meters **Accuracy Class:** 0.2s **Main meter no.:** RJB 73526 **Check meter no.:** RJB 73527 **Calibration frequency:** Once in three years **Date of last calibration:** 03/03/2011 (RJB 73526) & 24/01/2011 (RJB 73527)[10] **Validity:** 02/03/2014 & 23/01/2014 respectively

[6]Calibration certificate by Jodhpur Vidyut Vitaran Nigam Ltd. dated 12/03/2011
[7]Calibration certificate by C&I Systems dated 15/03/2012
[8]Calibration certificate by Jodhpur Vidyut Vitaran Nigam Ltd. dated 15/12/2010
[9]Calibration certificate by C&I Systems dated 15/03/2012
[10] Testing reports by JVVNL dated 3/03/2011 (RJB 73526) & 24/01/2011 (RJB 73527) respectively

	Result: % error – within permissible limit **Note: 18/11/2011 onwards the WTGs shifted to SEL – 142** **Type:** Trivector meters **Accuracy Class:** 0.2s **Main meter no.:** RJB 74438 **Check meter no.:** RJB 74439 **Calibration frequency:** Once in three years **Date of last calibration:** 11/08/2011[11] **Validity:** 10/08/2014 **Result:** % error – within permissible limit
Measuring/ Reading/ Recording frequency:	Monitoring Frequency: Continuous Recording frequency: Monthly
Calculation method (if applicable):	As per section C above.
QA/QC procedures:	The meters are approved, tested & sealed by the State Utility. The meters are in the custody of State Utility. The calibration of the meters is carried out by State Utility. The calibration of the meters is carried out at least once in three years (as per paragraph 17 (c) of *General Guidelines to SSC CDM methodologies, Version 17*). In the absence of the meter calibration— *Guidelines For Assessing Compliance With The Calibration Frequency Requirements* will be applied appropriately to confirm the conservativeness of metering and emission reductions.
Purpose of data:	Calculation of the Baseline emissions
Additional comment:	Data will be archived in electronic form for two years after the end of crediting period or of the last issuance of CERs for this project activity, whichever occurs later.

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

Calculation of Baseline Emissions (BE_y):

The baseline emissions are the product of electrical energy baseline $EG_{BL,y}$ *expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor.*

Thus:

$$BE_y = EG_{BL,y} \times EF_{CO2,grid,y}$$

Grid emission factor:

The grid emission factor for the project activity has been calculated *ex ante* as 0.9487 tCO_2/MWh.

Thus the baseline emissions for the project activity are given below:

Sr. No.	Monitoring Year	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project	Grid emission factor (tCO_2/MWh)	Baseline Emissions, tCO_2

[11]Testing reports by JVVNL dated 11/08/2011

		activity in year y in MWh, $EG_{BL,y}$		
1.	01/03/2012 to 31/12/2012	10,876	0.9487	10,318
2.	01/01/2013 to 31/12/2013	9,158	0.9487	8,688
3.	01/01/2014 to 31/03/2014	1,390	0.9487	1,318
Total		**21,424**	**-**	**20,324**

Thus, the baseline emissions by the project activity are 20,324 tCO_2 during the monitoring period 01/03/2012 - 31/03/2014 (including both days).

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

Calculation of Project Emissions (PE_y):

As per paragraph 19 of approved methodology AMS- I.D. (Version- 16, EB- 54), *for most renewable energy project activities, $PE_y = 0$.*

As project activity is wind power generation. The project emissions are thus considered as zero tCO_2. Thus, *$PE_y = 0$.*

E.3. Calculation of leakage

Calculation of Leakage Emissions (LE_y):

As per paragraph 20 of the approved methodology AMS- I.D. (Version- 16, EB- 54), *If the energy generating equipment is transferred from another activity, leakage is to be considered*.

The leakage emissions are considered as zero tCO_2 as no such equipment shall be transferred from another project activity. Thus, $LE_y = 0$.

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)
Total	**20,324**	**0**	**0**	**20,324**

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)	**28,430**	**20,324**

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

The comparison of actual emission reductions with the estimated emission reductions in the registered PDD during the monitoring period i.e. 01/03/2012 - 31/03/2014 (including both days) is tabulated as below:

Comparison of emission reductions with the estimated emission reductions in the approved PDD

Parameters	Values
Estimated Emission Reductions during 01/03/2012 - 31/03/2014, tCO2e as per registered CDM PDD, tCO_2e	28,430
Actual Emission Reductions, tCO_2e	20,324
Difference in tCO_2e	8,106
Difference in tCO_2e, %	**(-) 28.51**

The actual emission reductions for the monitoring period under consideration are less by 28.51% than the value estimated in the registered CDM-PDD.

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)	**10,318**	**10,006**

- - - - -

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

Project participant and/or responsible person/ entity	☒ Project participant ☐ Responsible person/ entity for completing the CDM-MR-FORM
Organization name	M/s D. J. Malpani
Street/P.O. Box	Kasara Dumala
Building	Malpani Estate
City	Sangamner
State/Region	Maharashtra
Postcode	422 605
Country	India
Telephone	+91-2425-225 261
Fax	+91-2425-225 033
E-mail	prafulla@malpani.com
Website	www.malpani.com
Contact person	
Title	Head - Wind Power Projects
Salutation	Mr.
Last name	Khinvasara
Middle name	-
First name	Prafulla
Department	-
Mobile	+91-98223 22145
Direct fax	-
Direct tel.	-
Personal e-mail	-

Project participant and/or responsible person/ entity	☐ Project participant ☒ Responsible person/ entity for application of the selected methodology (ies) and, where applicable, the selected standardized baselines to the project activity
Organization name	MITCON Consultancy & Engineering Services Ltd.
Street/P.O. Box	Shivajinagar
Building	Agriculture College Campus I Next to DIC Office
City	Pune
State/Region	Maharashtra
Postcode	411005
Country	India
Telephone	+91-20-6628 9522
Fax	Fax : +91-20-2553 0307
E-mail	kishor.deshmukh@mitconindia.com
Website	www.mitconindia.com
Contact person	-
Title	Chief Consultant
Salutation	Mr.
Last name	Deshmukh
Middle name	Raosaheb
First name	Kishor

Department	Energy & Carbon Services
Mobile	+91- 98234 98582
Direct fax	-
Direct tel.	-
Personal e-mail	-