



Monitoring report form for CDM project activity
(Version 08.0)

MONITORING REPORT

Title of the project activity	5.10 MW Wind Power Project by Shyam Metalics & Energy Limited in Maharashtra, India		
UNFCCC reference number of the project activity	9697 ¹		
Version number of the PDD applicable to this monitoring report	04		
Version number of this monitoring report	01		
Completion date of this monitoring report	07/06/2021		
Monitoring period number	03		
Duration of this monitoring period	01/01/2019 to 31/12/2020		
Monitoring report number for this monitoring period	Not applicable		
Project participants	Shyam Metalics & Energy Limited		
Host Party	India		
Applied methodologies and standardized baselines	AMS I.D ver. 17 - Grid connected renewable electricity generation		
Sectoral scopes	1 : Energy industries (renewable - / non-renewable sources)		
Amount of GHG emission reductions or net anthropogenic GHG removals achieved by the project activity in this monitoring period	Amount achieved before 1 January 2013	Amount achieved from 1 January 2013 until 31 December 2020	Amount achieved from 1 January 2021
	0 tCO ₂	13,066	0 tCO ₂
Amount of GHG emission reductions or net anthropogenic GHG removals estimated ex ante for this monitoring period in the PDD	17,049 tCO ₂		

¹ <https://cdm.unfccc.int/Projects/DB/RINA1374589833.08/view>

SECTION A. Description of project activity

A.1. General description of project activity

The CDM project activity is a wind power project in the state of Maharashtra, comprising six wind Turbine Generators (WTGs), with a cumulative capacity of 5.10 MW. The project activity is installation of six units of 850 kW wind turbine generators.

The purpose of the project is to generate 8,935 MWh of average electricity per annum, using the kinetic energy of wind, thus resulting in zero emissions during electricity production. The power generated is supplied to the state electricity board and it replaces the equal amount of power which would have been generated by fossil fuel-dominated NEWNE grid (now Indian Grid).

The project activity is combination of freshly installed WTGs with an aggregate capacity of 5.1 MW. The project activity is using technically and commercially proven wind turbines from Gamesa Wind Turbines Pvt Ltd. The applied technology is considered to be one of the most environmentally friendly and safe technologies available as the operation of the wind turbine does not emit any GHGs or any other harmful gases unlike the operation of conventional power plants. The project use the kinetic energy in wind to drive the wind turbine blades, which generates electricity.

List of the facilities, systems and equipment that are installed by the project activity have been tabulated below


Label	Survey Field No.	Village	Capacity	Make	Model No	Latitude (N)	Longitude (E)	Commissioning Date
GJN 47	19	Malal	0.85 MW	Gamesa	G58	17°00'57.82"	75°13'45.53"	26/09/2012
GJ 09 N1	122	Rampur	0.85 MW	Gamesa	G58	17°00'29.01"	75°10'23.35"	30/09/2012
GJ41	12	Malal	0.85 MW	Gamesa	G58	17°00'55.74"	75°13'17.98"	30/09/2012
GJ 43N	14	Malal	0.85 MW	Gamesa	G58	17°00'55.97"	75°13'17.3"	26/09/2012
GJN 5	151	Rampur	0.85 MW	Gamesa	G58	17°00'43.43"	75°09'29.04"	31/03/2012
GJN 7	150	Rampur	0.85 MW	Gamesa	G58	17°00'35.58"	75°09'36.05"	31/03/2012

During the current monitoring period 01/01/2019 to 31/12/2020 the project activity achieved GHG emissions reductions of 13,066 tCO₂e by supplying net electricity 13713.73 MWh to grid.

A.2. Location of project activity

District : Sangli
State : Maharashtra
Country: India

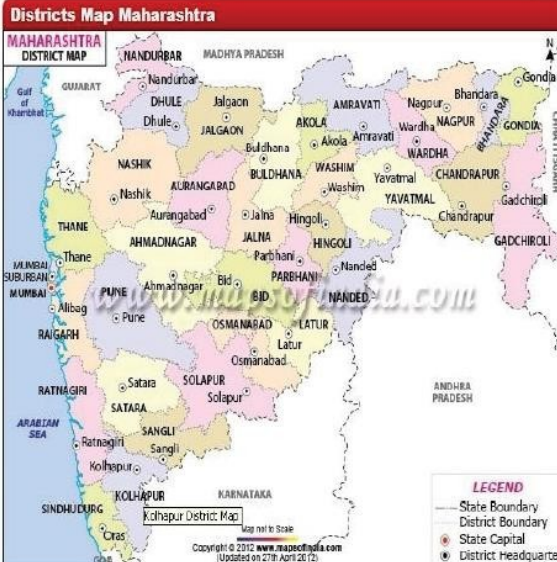
The location map of the Project Activity is given below:



Country: India
State: Maharashtra

District: Sangli
State: Maharashtra

Districts Map Maharashtra




LEGEND

- State Boundary
- District Boundary
- State Capital
- District Headquarter

Satara, Maharashtra

Survey Field No.	Coordinates (UTM)
365	43Q 518266 1880197
66	43Q 521420 1878696
49	43Q 521296 1878323
122	43Q 518468 1880517
151	43Q 516829 1880967
140/2	43Q 517451 1880547



Owner	WTG Capacity (MW)	Label	Survey Field No.	Village	Latitude	Longitude
Shyam Metalics Energy Limited	0.850	GJN 47	19	Malal	N17°00'57.82"	E75°13'45.53"
	0.850	GJ 09 N1	122	Rampur	N17°00' 29.01"	E75°10'23.35"
	0.850	GJ 41	12	Malal	N17°00' 55.74"	E75°13'17.98"
	0.850	GJ 43N	14	Malal	N17°00'55.97"	E75°13'17.3"
	0.850	GJN 5	151	Rampur	N17°00'43.43"	E75°09'29.04"
	0.850	GJN 7	150	Rampur	N17°00'35.58"	E75°09'36.05"

A.3. Parties and project participants

Parties involved	Project participants	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
India	Shyam Metalics & Energy Limited	No

A.4. References to applied methodologies and standardized baselines

Methodology: AMS-I.D. "Grid connected renewable electricity generation" (Version 17)²

Tool: "Tool to calculate the emission factor for an electricity system" (Version 02.2.1)³

A.5. Crediting period type and duration

Type	- Fixed
Monitoring Period	- 03
Start date of crediting period	- 23/07/2013
Length of Crediting period	- 10 Years
Duration of Crediting Period	- 23/07/2013 to 22/07/2023
Current Monitoring Period	- 01/01/2019 to 31/12/2020

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

The project activity is combination of freshly-installed WTGs with an aggregate capacity of 5.1 MW. The project activity uses technically and commercially proven wind turbines from Gamesa Wind Turbines Pvt Ltd. The applied technology is considered to be one of the most environmentally friendly and safe technologies available as the operation of the wind turbine does not emit any GHGs or any other harmful gases unlike the operation of conventional power plants. The project uses the kinetic energy in wind to drive the wind turbine blades which generates electricity.

The power is generated at voltage of 690 V, which will be stepped up to 33 kV at transformers located in a small yard adjacent to each WTG, before being fed into 110/33/11 kV Jath substation, which is the grid interconnection point. Meter readings for billing purposes are noted at this substation with the help of two energy meters--main meter and check meter-- installed therein.

List of the facilities, systems and equipment that are installed and/or modified by the project activity have been tabulated below:

<i>Facility 1 to 2: 6 WTGs</i>	
Systems/Equipments	Description

² <http://cdm.unfccc.int/UserManagement/FileStorage/V9LRSXKP24Q7YT6HZDUBO3C0ING8AJ>

³ <http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v2.2.1.pdf>

WTGs	Project Site	365	66	49	122	151	140/2
	Existing Capacity	0.85M W	0.85M W	0.85M W	0.85M W	0.85M W	0.85M W
	Make	Gamesa	Gamesa	Gamesa	Gamesa	Gamesa	Gamesa
	Model No	G58	G58	G58	G58	G58	G58
	Expected Life	20 Years	20Years	20Year s	20Year s	20Year s	20Year s
These WTGs will cumulatively generate 8,935 MWh of electricity at 690 V.							
Control panel	Gross electricity generated by each WTG is measured instantaneously at the individual control panel installed below it. Gross generation is, therefore, monitored by the project owners' representative, which is Gamesa, through these meters.						
Transformer yard	The transformer will step up the generation to a 33 kV for delivery into the NEWNE regional grid (now Indian grid) through 110/33/11 kV Jath substation, which is grid interconnection point for the project activity.						
Facility 2: 110/33/11 kV Jath Substation							
Main meter and check meter	The gross electricity generated by each WTG is transmitted into the 110/33/11 kV Jath SS, Dist, Sangli. Main and check meters, which are capable of measuring both export and import energy units, are installed in these substations. Net electricity export by the project activity are monitored at these metering points.						

Label	Survey Field No.	Village	Capacity	Make	Model No	Commissioning Date
GJN 47	19	Malal	0.85 MW	Gamesa	G58	26/09/2012
GJ 09 N1	122	Rampur	0.85 MW	Gamesa	G58	30/09/2012
GJ41	12	Malal	0.85 MW	Gamesa	G58	30/09/2012
GJ 43N	14	Malal	0.85 MW	Gamesa	G58	26/09/2012
GJN 5	151	Rampur	0.85 MW	Gamesa	G58	31/03/2012
GJN 7	150	Rampur	0.85 MW	Gamesa	G58	31/03/2012

B.2. Post-registration changes

B.2.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents

Not Applicable during the current monitoring period

B.2.2. Corrections

Not Applicable during the current monitoring period

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

Not Applicable during the current monitoring period

B.2.4. Inclusion of monitoring plan

Not Applicable during the current monitoring period

B.2.5. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents

Not Applicable during the current monitoring period

B.2.6. Changes to project design

Not Applicable during the current monitoring period

B.2.7. Changes specific to afforestation or reforestation project activity

Not Applicable as the project activity is not an afforestation or reforestation project activity.

SECTION C. Description of monitoring system

The monitoring plan is in accordance with the modalities and procedures for small-scale CDM project activities, as the project activity is a grid-connected wind power project implemented in the state of Maharashtra. The monitoring plan, which is implemented and taken care by the project proponent, describes the monitoring organization, parameters to be monitored, monitoring practices, quality assurance, quality control procedures, data storage and archiving

Monitoring Organization

The Project is managed by a Project Manager, who is a full time General Manager, further to be assisted by a Manager (Operations), in-charge of all technical aspects. The Manager (Operations) who is responsible for the operational activity of the wind project is having under him one Asst. Manager.

The monitoring agenda is delegated to a competent person identified for the purpose. The identified person is the in charge of GHG monitoring activities and prepare necessary audit reports for review by the management.

The identified person in charge is assisted by a team of experienced personnel in disciplines such as mechanical and electrical with experience in plant operation, measurements and management. The primary responsibility of the team is to collect, measure, monitor, record and reports the information on various data items to the person in charge and the General Manager, in accordance with the applicable standards. Periodic calibration of various instruments used in the monitoring of the data and record keeping of the same also is the responsibility of the team.

The responsibility of storage and archiving of information in good condition also lies with the designated person in charge. The person in charge undertake periodic verifications and onsite inspections to ensure the quality of the data collected by the team.

Monitoring plan– Maharashtra

For the project activity in order to establish creditable emission reduction, it has to record the actual electricity supplied by the project proponent through clean source of Energy i.e. Wind which would displace the equivalent units of electricity produced by Fossil fuel based power plants.

Metering

The monitoring of the generated electricity through Wind Turbine Generator is carried out by MSEDCL on monthly basis at the delivery point (Tri-vector meters installed at the substation) and also, Through Supervisory control and data acquisition system (SCADA) installed at Wind turbine generator controller on daily basis.

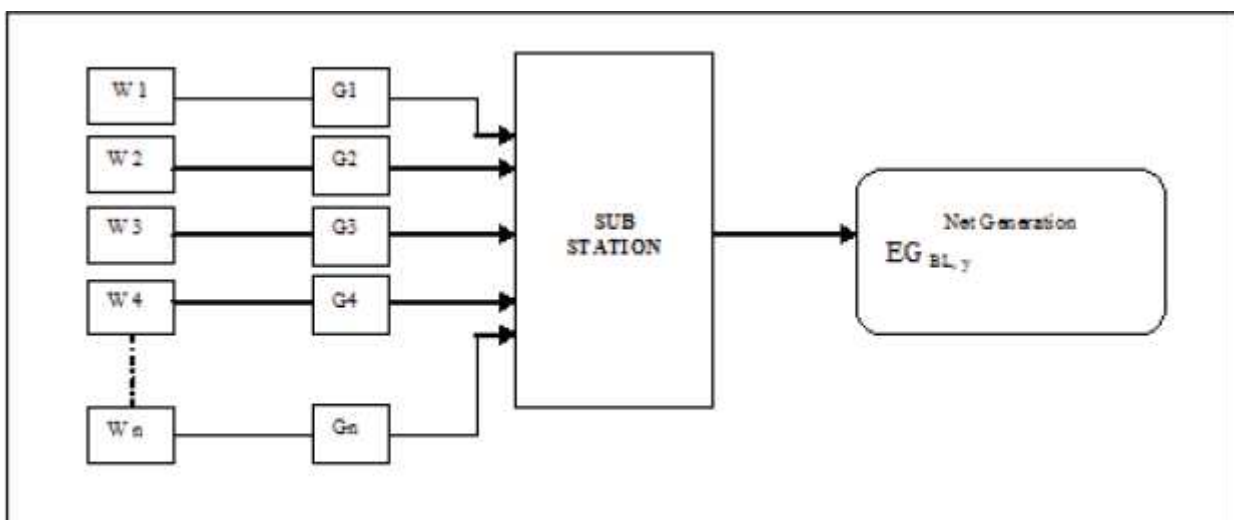
The value of the net electricity supplied to the grid by the project activity in year y i.e. $EG_{BL,y}$ is arrived at after subtracting the electricity imported from the grid by the project activity in year y , $EG_{IMP,PA,y}$, from electricity exported to the grid by the project activity in year y , $EG_{EXP,PA,y}$.

The calculation for $EG_{EXP,PA,y}$ & $EG_{IMP,PA,y}$ is done in the following manner:

In presence of the O&M representative and DISCOM representative, the monthly JMR is done at the substation at the main/check meter, which displays the combined export/import data for n number of WTGs, which includes the WTGs of the project activity, connected to that meter.

The OM representative prepares the JMR report to be submitted to DISCOM. In that report, apart from the combined values of export/import of n WTGs read from the meter, the individual break up of export/import data for each WTG is also provided. The values of $EG_{EXP,PA,y}$ & $EG_{IMP,PA,y}$ are apportioned in the break up sheet prepared by the O&M contractor i.e. Gamesa. PP doesn't have any role or control on preparation of electricity break up sheets.

Note – The above flow diagram is just schematic representation for common metering



Flow diagram of monitoring arrangement

arrangement and each feeder (e.g G1, G2 etc) involves multiple number of WTGs based on feeder load. For current monitoring period, WTGs GJN5 & GJN7 are connected to Feeder 01, whereas WTGs GJN47, GJ09N1, GJ41 & GJ43N are connected to Feeder no.2. Thus, feeder 1 and Feeder 2 meter details are provided in Monitoring report.

The project activity requires evacuation facilities for sale to grid, which is maintained by the state power utility (MSEDCL).

The electricity generation measurements are required by the utility and the investors to assess electricity sales revenue

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

developer's representative and officials of the state power utility). Both parties sign the recorded reading.

Date Uncertainty

In the event when verification period dates and billing cycle of WTGs in the Project Activity, do not coincide:

Each WTG is equipped with the Integrated Electronic Tri-vector Meter, which are connected to Central Monitoring System (CMS). The system continuously monitors the generation from each WTG. A daily-consolidated report of the generation data is generated in the form of 'Daily Performance Report' and recorded in Electronic as well as Printed form. In the event when the individual verification period dates and billing cycle dates (or dated of B-Form) of the various WTGs in the project activity do not coincide, the following procedure would be adopted to estimate the Net Power Supplied to the Grid during the specified period/or days where there is a mismatch.

X	Sum of generation during partial days of the month recorded at panel meter (kWh)
Y	Total generation during the month recorded at panel meter (kWh/month)
Z = X / Y	Generation during partial days (kWh)
B	Energy export as per B-Form during the month (kWh/month)
(B*Z)	Partial days exported as per B-Form considered for emission reduction calculation (kWh)

For current monitoring period, apportioning is not applicable.

Data Archiving

The metering equipment's is maintained in accordance with electricity standards and have the capability of recording daily and monthly readings. Records of joint meter reading are maintained at site and a copy is kept with the PP. Necessary records of calibration are maintained by both MSEDCL and project proponents.

The Generation Data and other related documents will be kept for 2 years after the whole crediting period. All monitored data is stored / archived under safe custody of the project executor and controller for a period of crediting period (10 Years fixed crediting period) + 2 years.

QA/QC Procedure

- The main & check meters are tested for accuracy, with a portable standard meter, by the MSEDCL'S testing division at the cost of seller. The MSEDCL carry out the calibration, periodical testing, sealing & maintenance of meters annually in the presence of authorized representative(s) of seller sign on the result thereof.
- The frequency of meter testing is annual. All meters are tested only at the metering point. The MSEDCL provides a copy of the test reports to the seller.
- If during testing, both the main & check meters are found within the permissible limits of error i.e. 0.2%, the energy computation is as per the main meter. If during test, any of the main meter is found to be within permissible limits of error but the corresponding check meter is beyond the permissible limit, energy computation is as per the main meter. The check meter shall be calibrated immediately.
- If during the tests, the main meter is found to be beyond permissible limits of error, but the corresponding check meter is found to be within the permissible limits of error, then the energy computation for the month to-date & time of such test check shall be in accordance with check meter. The main meter is calibrated immediately & the energy for the period thereafter is as per the calibrated main meter.

- If during any of the monthly meter readings, the variation between the main meter & check meter is more than 0.2%; all the meters shall be retested & calibrated immediately by MSEDCL, at the seller's cost.
- The correction required as per result of testing are applied to generation & consumption of energy for the period from last meter reading to the time of such test checks. Energy from the period there after shall be in accordance with calibrated main meter.
- The net electricity supplied to the grid are crosschecked with the invoices raised / sales receipts.

SECTION D. Data and parameters

D.1. Data and parameters fixed ex ante

Data/Parameter	$EF_{NEWNE, OM, y}$
Unit	tCO ₂ /MWh
Description	Operating margin CO ₂ emission factor for the project electricity system in year y
Source of data	CEA's "Baseline Carbon Dioxide Emission Database Version 7.0 "
Value(s) applied	0.9842
Choice of data or measurement methods and procedures	Calculated in line with "Tool to calculate the emission factor for an electricity system (Version 02.2.1)" using data from Central Electricity Authority of India's (CEA) "Baseline Carbon Dioxide Emission Database Version 7.0". Justified in section B.6.1 of registered PDD.
Purpose of data/parameter	Calculation of baseline emissions
Additional comments	The value is fixed ex-ante

Data/Parameter	$EF_{NEWNE, BM, y}$
Unit	tCO ₂ /MWh
Description	Build margin CO ₂ emission factor for the project electricity system in year y
Source of data	CEA's "Baseline Carbon Dioxide Emission Database Version 7.0 "
Value(s) applied	0.88588
Choice of data or measurement methods and procedures	Calculated in line with "Tool to calculate the emission factor for an electricity system (Version 02.2.1)" using data from Central Electricity Authority of India's (CEA) "Baseline Carbon Dioxide Emission Database Version 7.0". Justified in section B.6.1 of registered PDD.
Purpose of data/parameter	Calculation of baseline emissions
Additional comments	The value is fixed ex-ante

Data/Parameter	$EF_{NEWNE, CM, y}$
Unit	tCO ₂ /MWh
Description	Combined margin CO ₂ emission factor for the project electricity system in year y
Source of data	CEA's "Baseline Carbon Dioxide Emission Database Version 7.0 "
Value(s) applied	0.9528
Choice of data or measurement methods and procedures	Calculated in line with "Tool to calculate the emission factor for an electricity system (Version 02.2.1)" using data from Central Electricity Authority of India's (CEA) "Baseline Carbon Dioxide Emission Database Version 7.0". Justified in section B.6.1 of registered PDD.
Purpose of data/parameter	Calculation of baseline emissions
Additional comments	The value is fixed ex-ante

D.2. Data and parameters monitored

Data/Parameter	$EG_{BL,y}$
Unit	MWh
Description	Quantity of net electricity supplied to the grid by project activity in year y
Measured/calculated/default	To be calculated
Source of data	Monthly joint meter reading (JMR) at pooling substation.
Value(s) of monitored parameter	13713.73 MWh
Monitoring equipment	<p>The net electricity supplied to the grid by the project activity is continuously monitored both in individual WTG control panel (in built) and at the energy meter (main and check meter) installed at the sub-station. The project activity WTGs involves two feeders to export electricity to grid. Section C of MR mentioned the meter details for each feeder.</p> <p>The meters remain under the custody of state utility. Since, the energy meter is connected to number of WTGs along with the project WTGs the net electricity exported to grid by the project WTGs are calculated based on the gross electricity exported and imported to/from the grid at substation where all WTGs (WTGs of project activity and WTGs of other than project activity) are connected.</p> $EG_{BL,y} = EG_{EXP,PA,y} - EG_{IMP,PA,y}$ <p>Joint Meter Reading is recorded at the end of every month, by the representative of the state electricity board and representative of O&M Contractor. The Joint Meter Reading taken at the substation is apportioned by O & M provider along with state utility for individual project participants. PP doesn't have any role or control on preparation of Joint meter readings for individuals. PP also receives a copy of export ($EG_{EXP,PA,y}$) and import ($EG_{IMP,PA,y}$) data for his WTGs from which the net export of electricity to grid is calculated on monthly basis ($EG_{BL,y} = EG_{EXP,PA,y} - EG_{IMP,PA,y}$). This value is directly used for emission reduction calculation and on the same monthly net generation data, PP raises the invoice to MSEDCL.</p>
Measuring/reading/recording frequency	Continuous monitoring, Hourly measurement and Monthly recording
Calculation method (if applicable)	$EG_{BL,y} = EG_{EXP,PA,y} - EG_{IMP,PA,y}$
QA/QC procedures	<p>Accuracy class of metering equipment: 0.2 s</p> <p>Calibration frequency: Annual</p> <p>Responsible person for measurement – DISCOM shall be responsible for the calibration of the meters.</p> <p>Data Archiving: All data collected as part of monitoring would be archived electronically and kept for at least two years after the end of the last crediting period.</p> <p>The net electricity supplied to the grid can be crosschecked with the invoices raised / sales receipts.</p>
Purpose of data/parameter	Calculation of baseline emissions
Additional comments	-

Data/Parameter	$EG_{IMP,PA,y}$
Unit	MWh

Description	Quantity of electricity exported to the grid by project activity in year
Measured/calculated/default	Measured
Source of data	JMR report and Break up sheet provided by Gamesa to MSEDCL
Value(s) of monitored parameter	13761.76 MWh
Monitoring equipment	<p>The value of $EGIMP,PA,y$ is apportioned by the O&M contractor (Gamesa) and provided to the DISCOM in the break up sheet along with the JMR report as explained in section B.7.3 of registered PDD.</p> <p>For measuring the energy exported and imported by the project activity at the interconnection point, two set of main meter (part of interconnection facility) and check meter will be provided (Each feeder involves one set of main and check meters). The meters are owned by the state electricity board. The project activity WTGs involves two feeders to export electricity to grid. Section C of MR mentioned the meter details for each feeder.</p> <p>Apart from hourly meter reading, monthly joint meter readings at the interconnection point is noted by the designated officials of the company and DISCOM. The joint meter readings are recorded and signed by the authorized representative of both the parties.</p> <p>Calibration procedure – National Test House or equivalent – Third party testing Accuracy of the measurement - $\pm 0.2\%$ Responsible person for measurement – DISCOM is responsible for the calibration of the meters</p>
Measuring/reading/recording frequency	Continuous monitoring, Hourly measurement and Monthly recording
Calculation method (if applicable)	Not applicable
QA/QC procedures	<p>Accuracy class of metering equipment: 0.2 s</p> <p>Calibration frequency: Annual</p> <p>Data Archiving: All data collected as part of monitoring would be archived electronically and kept for at least two years after the end of the last crediting period</p>
Purpose of data/parameter	Calculation of baseline emissions
Additional comments	-

Data/Parameter	$EG_{EXP,PA,y}$
Unit	MWh
Description	Quantity of electricity imported from the grid by project activity in year y
Measured/calculated/default	Measured
Source of data	JMR report and Break up sheet provided by Gamesa to MSEDCL
Value(s) of monitored parameter	48.02 MWh

Monitoring equipment	<p>The value of $EG_{EXP,PA,y}$ is apportioned by the O&M contractor (Gamesa) and provided to the DISCOM in the break up sheet along with the JMR report as explained in section B.7.3 registered PDD.</p> <p>For measuring the energy exported and imported by the project activity at the interconnection point, two set of main meter (part of interconnection facility) and check meter will be provided (Each feeder involves one set of main and check meters). The meters are owned by the state electricity board. The project activity WTGs involves two feeders to export electricity to grid. Section C of MR mentioned the meter details for each feeder.</p> <p>Apart from hourly meter reading, monthly joint meter readings at the interconnection point is noted by the designated officials of the company and DISCOM. The joint meter readings are recorded and signed by the authorized representative of both the parties.</p> <p>Calibration procedure – National Test House or equivalent – Third party testing Accuracy of the measurement - $\pm 0.2\%$ Responsible person for measurement – DISCOM is responsible for the calibration of the meters</p>
Measuring/reading/recording frequency	Continuous monitoring, Hourly measurement and Monthly recording
Calculation method (if applicable)	Not applicable
QA/QC procedures	<p>Accuracy class of metering equipment: 0.2 s</p> <p>Calibration frequency: Annual</p> <p>Data Archiving: All data collected as part of monitoring would be archived electronically and kept for at least two years after the end of the last crediting period</p>
Purpose of data/parameter	Calculation of baseline emissions
Additional comments	-

D.3. Implementation of sampling plan

Not Applicable

SECTION E. Calculation of emission reductions or net anthropogenic removals

E.1. Calculation of baseline emissions or baseline net removals

The project activity reduces carbon dioxide through displacement of grid electricity generation with fossil fuel based power plants by renewable- wind energy. The emission reduction ER_y due to project activity during a given year y is calculated as the difference between baseline emissions (BE_y) and project emissions (PE_y) and leakage emissions (LE_y). However, as per registered PDD, there are no any project and leakage emissions.

Baseline Emissions Factor and Baseline Emissions during the current monitoring period

Particulars	Value
Baseline Emissions Factor ($EF_{NEWNE, CM, y}$ in tCO_2/MWh)	0.9528

Net Electricity Supplied to the Grid by the Project (EG _{BL,y} in MWh)	13713.73
Baseline Emissions (BE _y tCO ₂)	13,066 (round down)

E.2. Calculation of project emissions or actual net removals

As per methodology and registered PDD, it is zero.

E.3. Calculation of leakage emissions

As per methodology and registered PDD, it is zero.

E.4. Calculation of emission reductions or net anthropogenic removals

	Baseline GHG emissions or baseline net GHG removals (t CO ₂ e)	Project GHG emissions or actual net GHG removals (t CO ₂ e)	Leakage GHG emissions (t CO ₂ e)	GHG emission reductions or net anthropogenic GHG removals (t CO ₂ e)			
				Before 01/01/2013	From 01/01/2013 until 31/12/2020	From 01/01/2021	Total amount
Total	13,066	0	0	0	13,066	0	13,066

E.5. Comparison of emission reductions or net anthropogenic removals achieved with estimates in the registered PDD

Amount achieved during this monitoring period (t CO ₂ e)	Amount estimated ex ante for this monitoring period in the PDD (t CO ₂ e)
13,066	17,049

E.5.1. Explanation of calculation of “amount estimated ex ante for this monitoring period in the PDD”

As per the CDM registered PDD, the amount of CERs generated annually is 8513 tCO₂e. Therefore, the amount of estimated ex ante for this monitoring period is identified as explained below.

The total number of days in this monitoring period is 731 days. Hence, the amount of estimated ex ante for this monitoring period = $851 \times (731/365)$
 $= 17,049 \text{ tCO}_2\text{e}$

E.6. Remarks on increase in achieved emission reductions

It is to be noted here that as per the estimated emission reduction to be achieved from the project activity for the current monitoring period is 17,049 tCO₂e, whereas actual emission reductions achieved are 13,066 tCO₂e, which is approximately 23.36 % lower than the estimated emission reductions. This variation is majorly due to the lower generation during the current verification period owing to certain natural conditions which are not under the control of the PP

E.7. Remarks on scale of small-scale project activity

The project activity remained within the limit of small scale project activity in each year of the crediting period as the emission reductions are less than the limit of small scale CDM Project activity.

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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
08.0	6 April 2021	Revision to: <ul style="list-style-type: none"> • Reflect the “Clarification: Regulatory requirements under temporary measures for post-2020 cases” (CDM-EB109-A01-CLAR).
07.0	31 May 2019	Revision to: <ul style="list-style-type: none"> • Ensure consistency with version 02.0 of the “CDM project standard for project activities” (CDM-EB93-A04-STAN); • Add a section on remarks on the observance of the scale limit of small-scale project activity during the crediting period; • Add "changes specific to afforestation or reforestation project activity" as a possible post-registration changes; • Clarify the reporting of net anthropogenic GHG removals for A/R project activities between two commitment periods; • Make editorial improvements.
06.0	7 June 2017	Revision to: <ul style="list-style-type: none"> • Ensure consistency with version 01.0 of the “CDM project standard for project activities” (CDM-EB93-A04-STAN); • Make editorial improvements.
05.1	4 May 2015	Editorial revision to correct version numbering.
05.0	1 April 2015	Revisions to: <ul style="list-style-type: none"> • Include provisions related to delayed submission of a monitoring plan; • Provisions related to the Host Party; • Remove reference to programme of activities; • Overall editorial improvement.
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 GHG removals by sinks for the period up to 31 December 2012 and the period from 1 January 2013 onwards (EB 70, 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).
01.0	28 May 2010	EB 54, Annex 34. Initial adoption.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: monitoring report		