



**Monitoring report form for CDM project activity
(Version 07.0)**

MONITORING REPORT

Title of the project activity	Bundled wind power project at Satara, Maharashtra	
UNFCCC reference number of the project activity	9927	
Version number of the PDD applicable to this monitoring report	02	
Version number of this monitoring report	01	
Completion date of this monitoring report	14/08/2019	
Monitoring period number	02	
Duration of this monitoring period	01/04/2018 to 31/07/2019 (Inclusive of both days)	
Monitoring report number for this monitoring period	NA	
Project participants	M/s Sahyadri Industries Limited	
Host Party	India	
Applied methodologies and standardized baselines	AMS-I.D. – Grid connected renewable electricity generation (Version 17: EB 61)	
Sectoral scopes	Sectoral Scope : 01 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
	0	17,225 tCO ₂ e
Amount of GHG emission reductions or net anthropogenic GHG removals estimated ex ante for this monitoring period in the PDD	28,661 tCO ₂ e	

SECTION A. Description of project activity

A.1. General description of project activity

Sahyadri Industries Limited also known as the “Swastik” group is an established industrial group popularly recognised in the Building Material Industry, has been manufacturing Fibre cement products, building materials and engineering goods over three decades. The group is developed its in house technology of setting up fibre cement product manufacturing plant and has successfully erected four consecutive plants. Its products are well accepted across several states in the Indian market.

The group using the technology supplied by M/s Enercon India Ltd India, forays into renewable energy generation with the installation of 6 wind mills each having a capacity of 0.8 MW. Further, Patel individuals (7 members) have also installed 8 wind mills each having a capacity of 0.8 MW thereby totalling to 11.2 MW capacity wind bundle in the state of Maharashtra.

The total emission reductions accrued for the project activity during the monitoring period has been 17,225 tonnes of CO₂e.

Objective:

The main objective of the project activity is to generate electrical energy through sustainable means using wind power resources and thereby contribute to climate change mitigation efforts. The electricity generated is injected to the NEWNE grid. The project is not availing any REC or GBI benefits. In the absence of the project activity, the electricity thus supplied would have been generated by GHG intensive fossil fuel based thermal power plants. The project activity also contributes to sustainable social and economic well being along with conservation of environment through use of wind as a renewable source.

Scenario prior to implementation of the project activity or baseline:

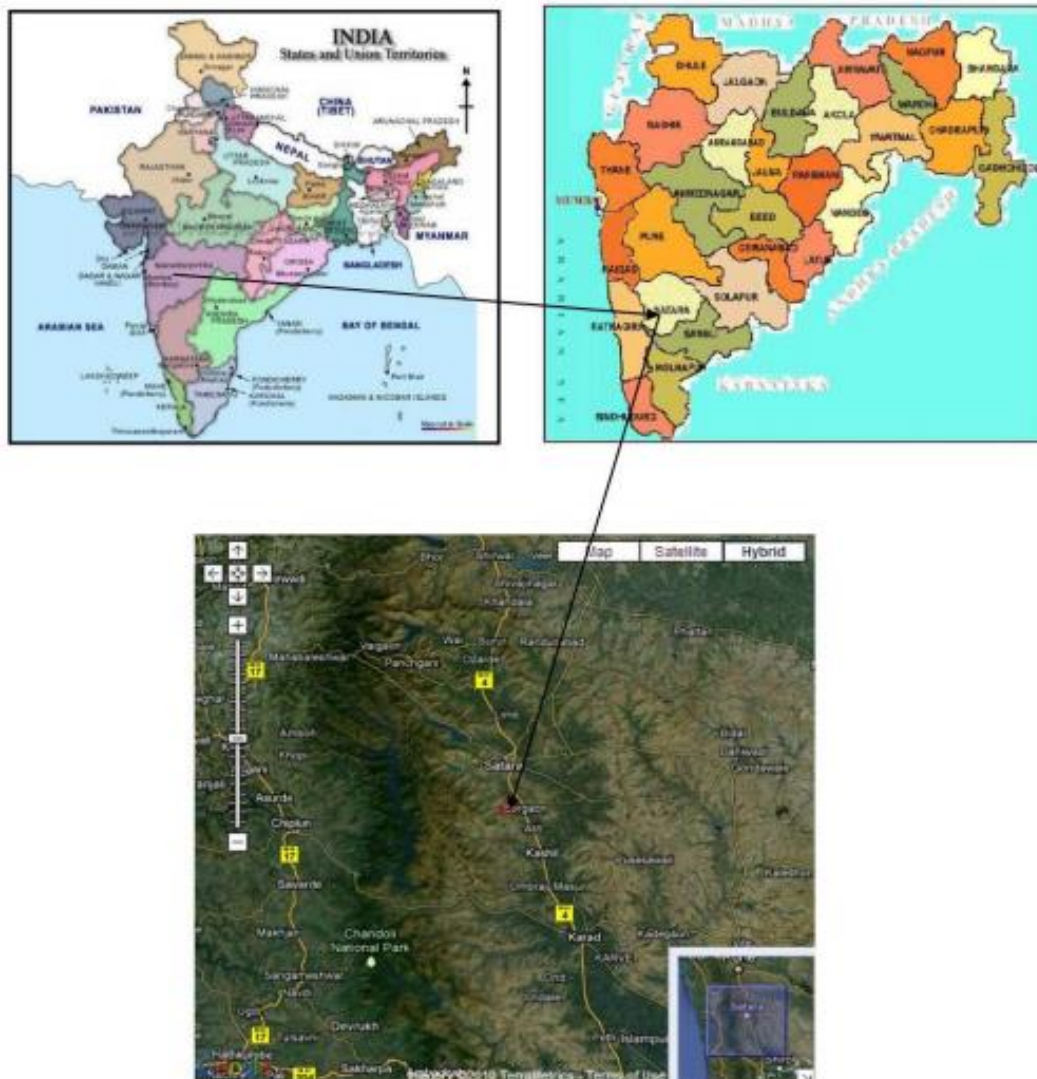
The scenario existing prior to the implementation of the project activity, is electricity delivered to the grid by the project activity that would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system”.

A.2. Location of project activity

The project is located at the Satara district of Maharashtra, the geo coordinate of the WTGs are as follows:

Loc no	Investor	Location	GPS coordinates
71	Sahyadri	Village –Asangaon Taluk- Koregaon District- Satara State- Maharashtra	N 17 51"33.1" E 74 4" 28.6"
79	Sahyadri	Village – Rautwadi Taluk- Koregaon District- Satara State- Maharashtra	N 17 51"55.9" E 74 03" 59
80	Sahyadri	Village – Rautwadi Taluk- Koregaon District- Satara State- Maharashtra	N 17 51"59.4" E74 03"56.5"
81	Sahyadri	Village – Rautwadi Taluk- Koregaon District- Satara State- Maharashtra	N 17 52" 2.9" E 74 03" 53.6
84	Sahyadri	Village – Rautwadi Taluk- Koregaon District- Satara State- Maharashtra	N 17 52"14.7" E 74 03"46.8"
86	Sahyadri	Village – Rautwadi Taluk- Koregaon District- Satara State- Maharashtra	N 17 52" 17" E 74 03" 24.6"
92	CP Patel	illage – Lagadwadi/ Rautwadi	N 17 52"36.9"

		Taluk- Wai/ Koregaon DistrictSatara State- Maharashtra	E 74 03"3.7"
76	JP Patel	Village – Asangaon Taluk- Koregaon District- Satara State- Maharashtra	N 17 51"50" E 74 04" 13.2"
131	JV Patel	Village – Chavaneshwar TalukKoregaon District- Satara State- Maharashtra	N 17 56"14.6" E 74 0" 14.7"
91	PL Patel	Village – Rautwadi Taluk- Koregaon District- Satara State- Maharashtra	N 17 52"33.9" E 74 03" 7.7"
132	SV Patel	Village – Chavaneshwar TalukKoregaon District- Satara State- Maharashtra	N 17 56"17.8" E 74 0" 11.4"
90	VV Patel	Village – Rautwadi Taluk- Koregaon District- Satara State- Maharashtra	N 17 52"29.7" E 74 03" 10.5"
133	VL Patel	Village – Chavaneshwar TalukKoregaon District- Satara State- Maharashtra	N 17 56"21.3" E 74 0" 8.2"
135	VL Pate	Village – Chavaneshwar TalukKoregaon District- Satara State- Maharashtra	N 17 56" 33" E 74 0" 36.5"



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 (host Party)	Sahyadri Industries Limited	No

A.4. References to applied methodologies and standardized baselines

The below methodology is applicable for the project activity

Methodology : AMS I. D Grid Connected Renewable Electricity Generation (Version 17, EB 61)¹
 Type I : Renewable Energy Project (Small Scale)
 Category : I. "D", Grid Connected Renewable Electricity Generation

Tool referred with above methodology is – Version 04, EB 75, Annex 15 of "Tool to calculate the emission factor for an electricity system"

A.5. Crediting period type and duration

Type : Renewable Crediting Period
 Duration : 07/07/2014 to 06/07/2021 (7 Years- Renewable twice)
 Current Monitoring Period : 01/04/2018 to 31/07/2019 (Inclusive of both days)

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

In wind energy generation, kinetic energy of the wind is converted into mechanical energy and subsequently into electrical energy. Wind turbines capture the wind's energy with three propeller like blades, which are mounted on a rotor, to generate electricity. The turbines are located on high towers, taking advantage of the stronger and less turbulent wind. As the wind blows through the blades of the windmill, a pocket of low-pressure air forms on the downwind side of the blade. The low-pressure air pocket then pulls the blade towards it, causing the rotor to spin. The rotor turns the shaft that further spins the connected generator. The spinning of this generator produces the required electricity.

The project activity involves the installation of 14 X 0.8 MW Wind Turbine Generators (WTGs) – Type E-53 by M/s Enercon India Ltd. The WTGs have a hub height of 74m and rotor diameter of 53m. The technical details of the WTG are given in the table below:

Parameter	Specification
Rated Power	800 k
Rotor diameter	53 m
Hub Height	74 m
Turbine Type	Direct driven, upwind, horizontal axis wind turbine with variable rotor speed.
Power Regulation	Independent pitch system for each blade.
No. of blades	3
Rated rotational speed	29 rpm
Blade Material	Glass Fibre reinforced Epoxy
Generator type	Synchronous Generator

Commissioning dates along with final deliverables with respect to WTG location numbers are tabulated below:

¹<https://cdm.unfccc.int/UserManagement/FileStorage/V9LRSXKP24Q7YT6HZDUBO3C0ING8AJ>

WTG Loc no	Date of Commissioning	Electricity sale
Sahyadri (Loc nos 71,79,80,81,84)	10th September 2011	To MSEDCL
Sahyadri (Loc no: 86)	30th September 2011	To MSEDCL
CP Patel (Loc no:92)	28th February 2012	To MSEDCL
JP Patel (Loc no:76)	3rd July 2012	To MSEDCL
JV Patel (Loc no:131)	17th February 2011	To third party till March 2012; To MSEDCL thereafter
PL Patel (Loc no:91)	30th September 2011	To MSEDCL
SV Patel (Loc no:132)	17th February 2011	To third party till March 2012; to MSEDCL thereafter
VV Patel (Loc no:90)	30th September 2011	To MSEDCL
VL Patel (Loc no:133)	17th February 2011	To third party till March 2012; to MSEDCL thereafter
VL Patel (Loc nos:135)	30th September 2010	To third party till March 2012; to MSEDCL thereafter

B.2. Post-registration changes

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

There is no request for deviation applied during this monitoring period.

B.2.2. Corrections

There have not been any corrections to project information or parameters fixed at validation during the current monitoring period.

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

There has been no changes in the start date of the crediting period.

B.2.4. Inclusion of monitoring plan

There has not been any change in the monitoring plan 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.

B.2.6. Changes to project design

The project has not been any changes to the project design document.

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

Not applicable

SECTION C. Description of monitoring system

As per paragraph 22 of SSC methodology AMS I.D. (Version 17), the monitoring plan should consist of metering the net electricity supplied by the project activity to the grid. Accordingly, the following two parameters will be monitored by the project proponent on a continuous basis:

EG_{EXP, y} Electricity exported by the project activity (kWh/year)

EG_{IMP, y} Electricity imported from the grid (kWh/year)

The net electricity supplied by the project activity, $EG_{BL,y}$ is measured/ calculated as

$$EG_{BL,y} = EG_{EXP,y} - EG_{IMP,y}$$

The operations and monitoring of WTGs performance has been outsourced to the technology supplier M/s. Enercon India Private Limited. All the WTGs at a particular site are connected & captured in a digital system located at that site. The captured data is then directly uploaded to the Customer Relationship Management (CRM) system. From the CRM, the daily generation reports are made available to Sahyadri Industries Limited on the customized website. The CRM manager is responsible for monitoring the WTGs and communicating results to Sahyadri Industries Limited. Any failure in the WTG, including in its monitoring system, would trigger the interlocking circuit will stop generation of electricity immediately.

The project activity involves common metering (project activity WTGs and WTGs of other investor) and apportioning formula is used to determine the net electricity generation by each WTG at electricity board substation.

The apportioning formula for net generation (export – import) of each WTG considers net generation at substation meter and same is apportioned as below. The generation at each WTG controller meter is considered for apportioning purpose. The ratio of controller meter generation at specific WTG to the total controller meter generation of all WTGs of that feeder is used to apportion the substation common meter readings.

Net Generation of each WTG @ Electricity Board (EB)

$$= \frac{\text{(Generation @ Individual WTG Meter)} \times \text{(Total Net Generation @ EB)}}{\text{Total Controller Generation of WTGs connected on a feeder}}$$

Similarly based on total export and total import reading at substation meter, the export and import of each WTG is determined by using the apportioning formula. The apportioning procedure is under control of state electricity board and PP do not have any control on it. In Joint meter reading report, WTG investor gets the apportioned value of export and import and net electricity supplied by respective WTG.

Each WTG in the project activity is equipped with an EB meter (common meter) and controller meter to record the amount of electricity exported. Each WTG controller meter is connected to a Central Monitoring Station, and monitored using automated computerized monitoring system. This server has a central location and is operated and maintained by M/s Enercon India Ltd. The controller meter is self calibrated and does not require any calibration.

The electricity export readings at each WTG is recorded by the O&M contractor (M/s Enercon India Ltd) on a daily basis by using the monitoring system at the project site. Apart from the project proponent, the O&M contractor are also part of the CDM team who is responsible for monitoring, recording maintenance and checking. The calibration of the monitoring equipment is performed on an annual basis in accordance with the requirements of state electricity board. If any of the meters is found to be faulty, electricity board officials would replace the faulty meter and the readings for this period shall be taken from check meter or log data maintained by M/s Enercon India Ltd. No such instance occurred during current monitoring period.

Sahyadri Industries Limited is overall responsible for storing and archiving data as well as the preparation of monitoring report and communicates with EB of UNFCCC for project performance, registration and verification of the CDM project activity.

Internal audits & Performance review

The records are regularly audited and checked by the senior officials from project proponent on an annual basis. The officials will monitor the actual emission reduction. The O&M in-charge is responsible for taking readings at site.

Apportioning of electricity: In case dates of monitoring period do not match with the dates of Joint Meter Reading Sheets / Generation reports issued by Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL):

Apportioning is carried out based on ratio of generation data recorded using LCS meters installed at the WTG. The LCS meters do not require calibration as the energy readings of electricity generated at the LCS meter is cross verified by the energy calculated by inverting system installed in the WTGs.

The emission reductions of that particular period (from the date of registration of the project till the end of the month) is calculated based on percentage generation of that particular period at WTG using LCS data multiplied with the total units generated in the month as per the Joint Meter Reading Sheets / Generation report issued by Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL).

The sample calculation is furnished below:

Generation from SIL WTGs for the monitoring period = A (From LCS data)

Generation from SIL WTGs for the billing period = B (From LCS data)

Net energy exported from SIL WTGs for the billing period = C (JMR/Generation share report by MSEDCL)

Net energy export used for calculation of emission reduction for the monitoring period = $(C * A / B)$

New kWh values as per JMR are crosschecked with Invoices and are found consistent.

Emergency Preparedness

In case of monitoring meter failure or errors, the grid officials would immediately replace the meter with a calibrated meter. There are two meters provided at each feeder: a Main Meter and a Check Meter. In case of failure of one of the meters, generation will be calculated based on the corresponding norms (Section 11.02 [c], [d] & [e]) as laid down in the Power Purchase Agreement:

“[c] If during testing, both the Main and Check Meter are found within the permissible limit of error i.e. 0.5%, the energy consumption will be as per the Main Meter. If during test, any of the Main Meters is found to be within the permissible limits of error but the corresponding Check Meter is beyond the permissible limit; the energy consumption will be as per the Main Meter. The Check Meter shall be calibrated immediately.

If during the tests, the Main Meter is found to be beyond the permissible limits of error, but the corresponding Check Meter is found to be within the permissible limits of error, then the energy consumption for the month to-date and time of such test shall be in accordance with Check Meter. The Main Meter shall be calibrated immediately and the energy for the period thereafter shall be as per the calibrated Main Meter.

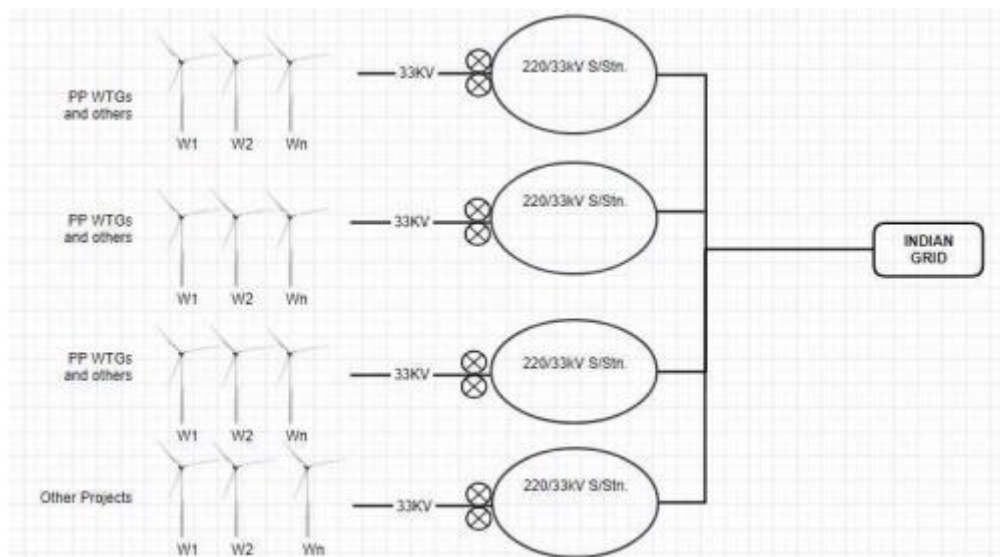
[d] If during any of the monthly meter readings, the variation between the main meter and the check meter is more than 0.5%, all the meters shall be re-tested and calibrated immediately.

[e] The correction required as per the result of the testing will be applied to the generation and consumption of energy for the period from last meter reading to the time of such test checks. Energy for the periods thereafter shall be in accordance with the calibrated Main Meter.”

For current monitoring period, there is no any emergency preparedness required. The O&M service provider is responsible for maintenance of the necessary spare parts and consumables for the maintenance of the WTGs such as anemometers, wind vanes and sensors, oil filters, batteries,

auxiliary motors and pumps, WTG controllers, slip rings, limit switches and sensors, detergents & solvents etc. The service provider would also be responsible for supply of necessary main components of the WTG such as main gearboxes, blades, generators, towers, hubs, main shafts & bearings, ground and top controller and hydraulic systems. The service provider would also ensure that occupational health and safety procedures are adhered to during the operation & maintenance activities. Additionally, spare meters would also be kept available at the site for replacement in case of failure of any of the monitoring equipments.

The schematic metering arrangement is as below:



The project activity involves common metering arrangement and project activity WTGs are connected to three different feeders. Project WTGs along with feeder are illustrated in the above diagram. The parameter $EG_{EXP,y}$ and $EG_{IMP,y}$ is derived from the reading of bidirectional common meter at substation and dedicated controller meter (for each WTGs) by apportioning formula mentioned in Section C. The net electricity export of each WTG is difference of apportioned value of export and import. Each WTG is equipped with controller meter and this controller meter and common meter at substation is used for apportioning purpose.

SECTION D. Data and parameters

D.1. Data and parameters fixed ex ante

Data/Parameter	Operating Margin emission factor
Unit	tCO ₂ / MWh
Description	CO ₂ Operating Margin emission factor for the NEWNE region grid (Three years average-2009-2010, 2010-2011, 2011-2012)
Source of data	CO ₂ Baseline Database for the Indian Power Sector, User Guide (Version 8)
Value(s) applied	0.9733
Choice of data or measurement methods and procedures	The Central Electricity Authority of India prepares the data
Purpose of data/parameter	For the calculation of grid emission factor for estimating the baseline emissions
Additional comments	This database is an official publication of Government of India for the purpose of CDM baseline. It is based on most recent data available to the Central Electricity Authority and hence considered authentic. As the calculation of baseline emission has been done ex ante its value will remain fixed for the entire crediting period.

Data/Parameter	Build Margin emission factor
Unit	tCO ₂ / MWh
Description	CO ₂ Build Margin emission factor for the NEWNE region grid 2011-2012
Source of data	CO ₂ Baseline Database for the Indian Power Sector, User Guide (Version 8)
Value(s) applied	0.92
Choice of data or measurement methods and procedures	The Central Electricity Authority of India prepares the data
Purpose of data/parameter	For the calculation of grid emission factor for estimating the baseline emissions
Additional comments	This database is an official publication of Government of India for the purpose of CDM baselines. It is based on most recent data available to the Central Electricity Authority and hence considered authentic. As the calculation of baseline emission has been done ex ante its value will remain fixed for the first crediting period

Data/Parameter	EF _{CO₂,grid,y}
Unit	tCO ₂ / MWh
Description	EF _{CO₂,grid,y} is the grid Emission Coefficient calculated in a transparent and conservative manner as Combined Margin (CM) which is the combination of Operation Margin (OM) and Build Margin (BM) (OM & BM have been calculated ex-ante)
Source of data	Grid emission factor calculation: $EF_{CO_2,grid,y} = 0.75 \times EF_{OM,y} + 0.25 \times EF_{BM,y}$ $= 0.75 \times 0.9733 + 0.25 \times 0.92$ $= 0.959 \text{ tCO}_2/\text{MWh}$ Values of OM and BM are taken from CEA User Guide, CO ₂ Baseline Database for the Indian Power Sector, Version 08.
Value(s) applied	0.959
Choice of data or measurement methods and procedures	The EF _{CO₂,grid,y} calculation is based on the guidelines in emission tool.
Purpose of data/parameter	For the calculation of emission reductions from the project activity.
Additional comments	The calculation is done ex ante.

D.2. Data and parameters monitored

Data/Parameter	EG _{BL, y}
Unit	MWh
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y. This is calculated figure and is used ER calculation.
Measured/calculated/default	Calculated based on Measured data
Source of data	Calculated based on Joint Meter Reading Sheets and generation reports issued by Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL) for all the feeders to which WTGs of the project activity are connected.
Value(s) of monitored parameter	17,961.28
Monitoring equipment	Not applicable as this parameter is calculated as the difference of electricity exported to and imported from the grid.
Measuring/reading/recording frequency	Monthly

Calculation method (if applicable)	<p>Net electricity supplied will be calculated as the difference of electricity exported to and imported from the grid measured using the readings taken at the main/check meter installed at the interconnection point.</p> <p>$EG_{\text{facility, y}} = EG_{\text{export, y}} - EG_{\text{import, y}}$</p> <p>Joint Meter Reading Sheets and generation report issued by Maharashtra State Electricity Distribution Co. Ltd. on a monthly basis shall be used for this purpose.</p> <p>Apportioning procedure for deriving net electricity generated by the project activity has been explained in the section C of MR.</p>
QA/QC procedures	The value of this parameter can be cross checked with all the invoices generated for the sold electricity during the year y. The meters shall be calibrated on a regular basis as per norms mentioned in the PPA. The calibration is usually done by MSEDCL or electrical inspector every year.
Purpose of data/parameter	For calculation of baseline emissions
Additional comments	The data is being archived for the entire crediting period +2 years.

Data/Parameter	EG_{EXP, y}
Unit	MWh
Description	Quantity of electricity exported by the Project to the grid in year y
Measured/calculated/default	Measured
Source of data	Joint Meter Reading Sheets and generation reports issued by Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL) for all the feeders to which WTGs of the project activity are connected. EG _{export, y} will be summation of readings of individual Joint Meter Reading Sheets. EG _{EXP, y} is also accounted for transmission losses (if any)
Value(s) of monitored parameter	17,972.46
Monitoring equipment	Meters with accuracy class of 0.2 s at the metering point (Main Meter) is installed. Check meter with separate CT/PT of class 0.2s also installed. Quantity of electricity exported by the Project to the grid would be calculated using the sum of readings taken at the main/check meter installed at the Interconnection points.
Measuring/reading/recording frequency	Continuous monitoring and monthly recording
Calculation method (if applicable)	Data monitoring would take place at the substation on a continuous basis and is being recorded on monthly basis. On the basis of these readings taken, a generation report would also be issued by MSEDCL.
QA/QC procedures	The value of this parameter can be cross checked with all the invoices generated for the sold electricity during the year y. The meters shall be calibrated on a regular basis as per norms mentioned in the PPA. The calibration is usually done by MSEDCL or electrical inspector every year.
Purpose of data/parameter	For calculation of baseline emissions
Additional comments	The data is being archived for the entire crediting period +2 years.

Data/Parameter	EG_{IMP, y}
Unit	MWh
Description	Quantity of electricity imported by the Project from the grid in year y
Measured/calculated/default	Measured
Source of data	Joint Meter Reading Sheets and generation reports issued by Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL) for all the feeders to which WTGs of the project activity are connected. EG _{import,y} will be summation of readings of individual Joint Meter Reading Sheets.

Value(s) of monitored parameter	11.16
Monitoring equipment	Meters with accuracy class of 0.2 s at the metering point (Main Meter) is installed. Check meter with separate CT/PT of class 0.2s also installed. Quantity of electricity imported by the Project from the grid would be calculated using the sum of readings taken at the main/check meter installed at the interconnection points
Measuring/reading/recording frequency	Continuous monitoring and monthly recording
Calculation method (if applicable)	Data monitoring would take place at the substation on a continuous basis and is being recorded on monthly basis. On the basis of these readings taken, a generation report would also be issued by MSEDCL
QA/QC procedures	The value of this parameter can be cross checked with all the invoices generated for the sold electricity during the year y. The meters shall be calibrated on a regular basis as per norms mentioned in the PPA. The calibration is usually done by MSEDCL or electrical inspector every year.
Purpose of data/parameter	For calculation of baseline emissions
Additional comments	The data is being archived for the entire crediting period +2 years.

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

As described in the section above, the total emission reduction achieved in a year would be

$$ER_y = BE_y - PE_y - LE_y$$

Where,

ER_y is the Emission reductions during the year y

BE_y is the Baseline emissions during the year y

PE_y is the Project emissions during the year y

LE_y is the Leakage emissions during the year y

Baseline emissions:

The baseline emissions are calculated based on the given formula:

$$BE_y = EG_{BL,y} * EF_{CO_2,grid,y}$$

$$EG_{BL,y} = 17,961.28 \text{ MWh}$$

$$BE_y = 17,961.28 \text{ MWh} \times 0.959 \text{ tCO}_2/\text{MWh} \\ = 17,225 \text{ tCO}_2$$

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

As per AMS I.D (Version 17), the project emissions are zero.

Therefore,

$$PE_y = 0 \text{ tCO}_2\text{e}$$

E.3. Calculation of leakage emissions

As per AMS I.D. (Version 17), and leakage emissions are to be taken into account “If the energy generating equipment is transferred from another activity, leakage is to be considered. Since transfer of equipment is not envisaged in the project activity, the leakage emissions will be equal to zero.

Therefore,

LE_y = 0 tCO₂e

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	Total amount
Total	17,225	0	0	0	17,225	17,225

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)
17,225	28,661

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

Considering the annual average emission reductions as per the registered PDD which is 21,481 tCO₂e per year, the number of days covered during the current monitoring period comes out to be 487 days, based upon which the estimated emission reductions attributed to this monitoring period comes out to be 28,661 tCO₂e. The detailed calculation can be referred from the emission reduction sheet.

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 28,661 tCO₂e, whereas actual emission reductions achieved are 17,225 tCO₂e, which is approximately 39.90% lower than the estimated emission reductions. The generation of electricity depends upon many other climatic conditions, and not within the control of the project participant. The lower generation during the current verification period is hence due to certain natural conditions and hence acceptable.

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

The project activity remain as a small scale project activity for the entire period.

Document information

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

<i>Version</i>	<i>Date</i>	<i>Description</i>
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Decision Class: Regulatory		
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