 <b>Monitoring report form for CDM project activity</b> <b>(Version 09.0)</b>			
<b>MONITORING REPORT</b>			
<b>Title of the project activity</b>	9.9 MW Bundled Wind Power Project in Tirupur, Tamilnadu.		
<b>UNFCCC reference number of the project activity</b>	9487		
<b>Version number of the PDD applicable to this monitoring report</b>	04.1		
<b>Version number of this monitoring report</b>	05		
<b>Completion date of this monitoring report</b>	15/12/2021		
<b>Monitoring period number</b>	1 <sup>st</sup> Monitoring Period		
<b>Duration of this monitoring period</b>	23/09/2013 – 31/08/2018 (Inclusive of both the dates)		
<b>Monitoring report number for this monitoring period</b>	N/A		
<b>Project participants</b>	M/s Vestas Wind Technology India Private Limited		
<b>Host Party</b>	India		
<b>Applied methodologies and standardized baselines</b>	Methodology: (AMS-I.D. Version-17) Grid connected renewable electricity generation Standard baselines – N/A		
<b>Sectoral scopes</b>	1 : Energy industries (renewable - / non-renewable sources)		
<b>Amount of GHG emission reductions or net anthropogenic GHG removals achieved by the project activity in this monitoring period</b>	Amount achieved before 1 January 2013	Amount achieved from 1 January 2013 until 31 December 2020	Amount achieved from 1 January 2021
	0	95,229	0
<b>Amount of GHG emission reductions or net anthropogenic GHG removals estimated ex ante for this monitoring period in the PDD</b>	120,398 <sup>1</sup> (tCO <sub>2</sub> e)		

<sup>1</sup>Emission Reduction comparison calculation is provided transparently in ER calculation sheet. Actual Emission Reduction comparison with ex-ante estimated emission reduction calculation has been explained in section E.5.1 of this MR. Also, provided the calculation transparently in ER calculation sheet.

## SECTION A. Description of project activity

### A.1. General description of project activity

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The purpose of the project activity is to generate electricity by harnessing renewable energy source (Wind) available in Tirupur district of Tamil Nadu with the help of Wind Turbine Generators (WTGs). The generated electricity by the project activity is wheeled through the Indian grid<sup>2</sup> for captive utilization at project participant (PP) industrial facility. Thus, replacing the equivalent amount of fossil fuel dominated grid electricity consumption at respective industrial plant, thereby contributing in GHG emission reduction.

The project activity involves the installation of 6 numbers of WTGs of 1650 kW each, in Tirupur district of Tamil Nadu state, India. Vestas Wind Technology Private Limited supplies the WTGs (Vestas V82 make).

The project activity is a bundled project. Vestas Wind Technology Private Limited is authorised by all the project participant to act as the sole focal point for communication with National CDM Authority and CDM Executive Board of the UNFCCC.

The total emission reductions achieved under this monitoring period (23/09/2013 to 31/08/2018) (inclusive both days) are 95,229 tCO<sub>2e</sub>.

### A.2. Location of project activity

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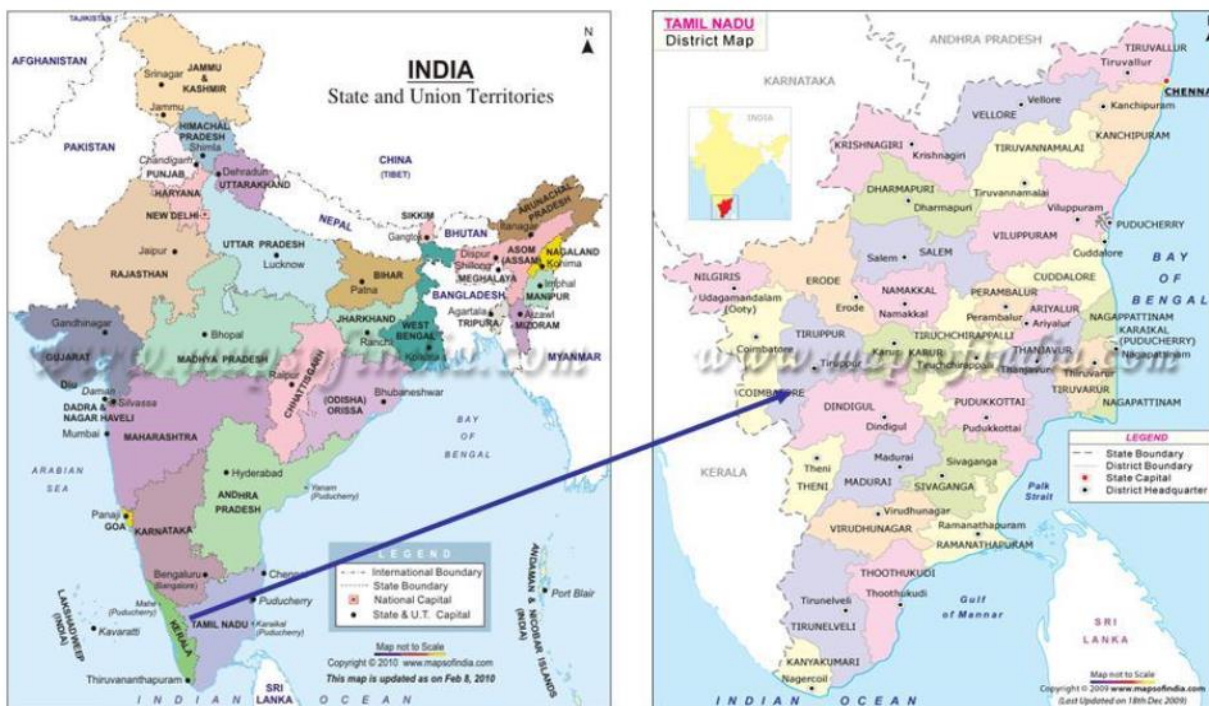
The project activity is located in the Tirupur district in the state of Tamil Nadu.

The latitude and longitude of the individual WEG are listed in Table 1.

Owner	Survey no.	HTSC	Village	Longitude (°E)	Latitude (°N)
Bannari Amman & Spinning Mills Ltd	6/1 (P)	U-1861	Virugalpatti	77°08'40.48"	10°43'27.93"
	212 (P)	U-1859	Virugalpatti	77°09'18.80"	10°42'49.76"
	255/1 (P)	U-1853	Illuppanagaram	77°11'45.40"	10°43'26.32"
Shiva Tex Yarn Ltd.	94/C(P),95(P)	U-1854	Vagatholuvu	77°10'45.54"	10°44'51.27"
	230/1(P),2(P)	U-1858	Virugalpatti	77°09'37.05"	10°43'02.39"
	168/B1(P)	U-1860	Virugalpatti	77°09'07.10"	10°42'33.21"

Figure below shows the project location map

<sup>2</sup>As of 31 December 2013, the Southern grid has also been synchronised with the NEWNE grid, hence forming one unified Indian Grid.



Map not to scale

### 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)	Vestas Wind Technology India Private Limited	No

### A.4. References to applied methodologies and standardized baselines

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Type I: **'Renewable energy projects'**,Category I.D<sup>3</sup>. **'Grid Connected Renewable Electricity Generation' (Version 17)**

Sectoral Scope: 01 'Energy industries (renewable-/non-renewable sources).'

In line with the application of the AMS-I.D. Version 17, the following tools and guidelines are used:

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

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

### A.5. Crediting period type and duration

&gt;&gt;

Type: Fixed

Start Date: 23/09/2013

End Date: 22/09/2023

<sup>3</sup><https://cdm.unfccc.int/methodologies/DB/W3TINZ7KKWCK7L8WTXFQQOFQQH4SBK>

## SECTION B. Implementation of project activity

### B.1. Description of implemented project activity

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The project involves the installation of 6 no's of 1650 kW (V82/1650 model) rated Wind Electric Generators of Vestas make. These WEGs are ideal for Indian meteorological conditions. The V82/1650 with a rated capacity of 1650 kW is an ACTIVE STALL™ machine with cut-in and cut-out speeds of 2.5 m/s and 32 m/s, respectively. The machines are particularly suitable for the low and medium wind sites available in India. The V82/1650 machines are type tested and certified by DNV, Denmark A/S.

The technical design of the V 82/1650 WEGs is from Vestas Wind Systems A/S, Denmark where a dedicated team of professionals are actively involved in design and testing..

The project uses technology that is environmentally clean and safe<sup>4</sup> since there are no GHG emissions associated with the electricity generation from the windmills. During the monitoring period there were no events or situations occurred, which may impact the applicability of the methodology.

Date of Commissioning for each WTG in the project activity is as below:

Sr. No.	Project Owner	WTG ID	Date of Commissioning
1.	Bannari Amman & Spinning Mills Ltd	U-1861	25/05/2010
2.		U-1859	20/05/2010
3.		U-1853	21/04/2010
4.	Shiva Tex Yarn Ltd.	U-1854	21/04/2010
5		U-1858	20/05/2010
6		U-1860	25/05/2010

The Salient features of the technology are as follows:

- ISO 9001 Certificate for Design and Manufacture; ISO 9001:2000 for Installation & Commissioning and for Operation & Maintenance.
- Approved by Centre for Wind Energy Technology ,
- Type certified by Det Norske Veritas, Denmark

#### Wind Turbine Certification.

- Suitable for India's harsh climatic conditions prevailing at remote locations.
- Improved power curve for operation under low wind conditions.
- Full load and dynamic phase compensation to enhance reactive power regulation.
- Integrated Power transmission mechanism.
- High Performance Rotor blades.
- Asynchronous liquid cooled generator.
- Microprocessor based fully automatic control system with user friendly operation and central monitoring system.
- Quality, Safety and Health plan for construction, installation, commissioning and Operation & Maintenance.
- Microprocessor controlled high efficiency soft start.
- Active Yaw gear drives incorporating hydraulic yaw brakes.

<sup>4</sup>No technology transfer is envisaged for the proposed CDM project activity.

Specifications of the individual WTGs are as follows-

<b>Description</b>	<b>Specifications</b>
Tower/Rotor Height	78 Meter
Rotor Diameter	82 Meter
Installed electrical output	1650 kW
Cut-in wind speed	3.5 m/s.
Rated wind speed	7.5 m/s.
Cut-out wind speed	20 m/s. (10 minute average)
Rotor swept area	5,281 sq. meters.
Rotational speed	14.4 rpm
Rotor material /Blades material	Carbon fibre/epoxy/wood/glass
Regulation	Active Stall
Generator	Asynchronous liquid cooled.
Rated output	1650 kW
Rotational speed at rated power	1012 rpm
Operating voltage	3 x 690 V
Frequency	50 Hz
Gear Box	One planetary stage, two helical stages
Manufacturer	Vestas
Nominal load Gearbox Mechanical power	1800 kW
Aerodynamic brake	Full blade pitch
Mechanical brake	Hydraulic disc brake
Control unit	SCADA

## **B.2. Post-registration changes**

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

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Not Applicable

### **B.2.2. Corrections**

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Not Applicable

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

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Not Applicable

### **B.2.4. Inclusion of monitoring plan**

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Not Applicable

### **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**

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Not Applicable

**B.2.6. Changes to project design**

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Not Applicable

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

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Not Applicable

**SECTION C. Description of monitoring system**

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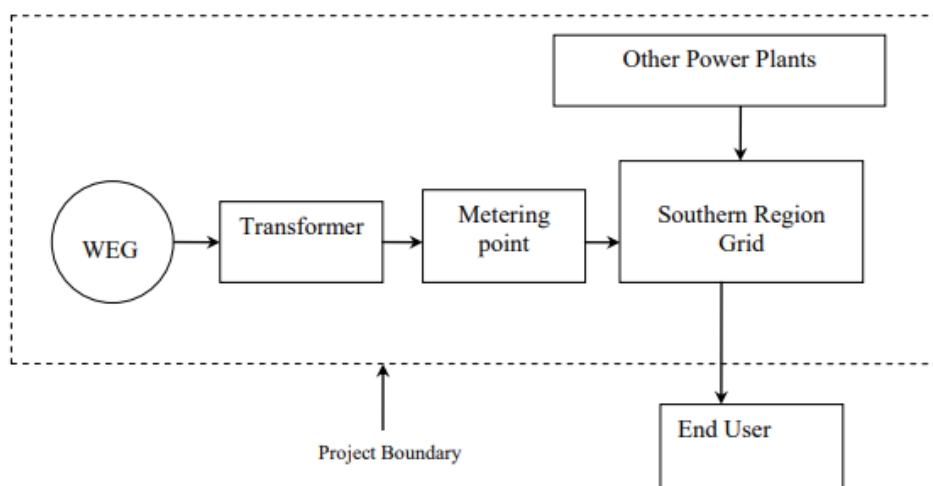
Monitoring of emission reductions is carried out following the guidance provided in the applicable methodology of the project activity –AMS-I.D. version 17. The monitoring methodology requires that the project-monitoring plan should consist of monitoring quantity of net electricity supplied to the grid in the year y. In order to monitor the mitigation of GHG due to the project activity, the total energy exported needs to be measured. The net energy supplied to grid by the project activity multiplied by emission factor for regional grid, would form the baseline for the project activity.

Since the baseline emission factor is based on an ex-ante determination, monitoring of this parameter is not required. The sole parameter for monitoring is the net electricity exported to the grid.

The measurement of electricity is carried out as per the guidelines of the state electricity board. WEGs in Tamil Nadu have 0.2 accuracy class meters at grid interconnection point to measure the generated electricity. The accuracy of monitoring parameter is ensured by adhering to the calibration and testing procedure as set in wheeling agreement. The energy meters are under the control of TNEB.

The meters installed at the turbine sub-station measure the export and import of electricity continuously. As per the agreement signed with the state electricity board, a representative from the state electricity board and a representative of the operation and maintenance contractor will undertake main meter readings monthly. The final generation statement is issued by TNEB to the project proponent on monthly basis. The copies of such credit report are primary document relating to actual number of units fed to the grid and will be maintained for 10+2 years (crediting+ 2 years) by Enercon.

Line diagram showing the relevant metering points is as below:



**Calibrations Details of Meters:**

All the meters are two-way Tri-vector meters capable of recording import and export of electricity. Meter details for all the meters are as follows:

Owner	HTSC no	Meter Serial No.	Accuracy Class	Commissioning Date	Validity of 1 <sup>st</sup> Calibration	2 <sup>nd</sup> Calibration Date	Validity of 2 <sup>nd</sup> Calibration	3 <sup>rd</sup> Calibration Date	Validity of 3 <sup>rd</sup> Calibration
BASML	U-1853	HT2160884	0.2s	21-04-2010	20-04-2011	15-02-2017	14-02-2018	15-02-2021	14-02-2022
BASML	U-1859	HT2160882	0.2s	25-05-2010	24-05-2011	15-02-2017	14-02-2018	15-02-2021	14-02-2022
BASML	U-1861	HT2160883	0.2s	25-05-2010	24-05-2011	15-02-2017	14-02-2018	15-02-2021	14-02-2022
Shiva	U-1854	HT2160232	0.2s	21-04-2010	20-04-2011	16-02-2017	15-02-2018	16-02-2021	15-02-2022
Shiva	U-1858	HT2160878	0.2s	20-05-2010	19-05-2011	15-02-2017	14-02-2018	18-02-2021	17-02-2022
Shiva	U-1860	HT2160879	0.2s	20-05-2010	19-05-2011	15-02-2017	14-02-2018	15-02-2021	14-02-2022

PP has considered calibration frequency of energy meter as once in a year. However, there is delay in conducting next calibration of energy meters as the calibration of monitoring equipment is solely under control of TNEB and the project participant has not any control; the project will adhere to all the mandatory regulatory and statutory requirements at the state as well as national level.

However, PP has followed the frequency mentioned in the registered PDD i.e. at least once in a year and applied the maximum permissible error of 0.2% to Export & Import values for the delayed period.

					Date of Registration		23-09-2013
S.N o.	Owner	HTSC no	Meter Serial No.	Calibration Date		Delay Period in this MP (months <sup>5</sup> )	
				From	Valid up To	From	To
1	BASML	U-1853	HT2160884	21-04-2010	20-04-2011	Sep-13	Feb-17
				15-02-2017	14-02-2018	Feb-18	Sep-18
				15-02-2021	14-02-2022	There is further delay in calibration beyond the end of the current monitoring period, the PP has calibrated the Energy Meters of 15-02-2021 and calibration certificate result shows Energy Meter are working properly throughout the period since last calibration done in 15-02-2017. The latest calibration certificates submitted to DOE for verification.	
2	BASML	U-1859	HT2160882	25-05-2010	24-05-2011	Sep-13	Feb-17
				15-02-2017	14-02-2018	Feb-18	Sep-18
				15-02-2021	14-02-2022	There is further delay in calibration beyond the end of the current monitoring period, the PP has calibrated the Energy Meters of 15-02-2021 and	

<sup>5</sup>This refers billing-months as per TANGEDCO. Refer the emission-reduction sheet for respective billing-periods and imposition of error-factor accordingly.

						calibration certificate result shows Energy Meter are working properly throughout the period since last calibration done in 15-02-2017. The latest calibration certificates submitted to DOE for verification.	
3	BASML	U-1861	HT2160883	25-05-2010	24-05-2011	Sep-13	Feb-17
				15-02-2017	14-02-2018	Feb-18	Sep-18
				15-02-2021	14-02-2022	There is further delay in calibration beyond the end of the current monitoring period, the PP has calibrated the Energy Meters of 15-02-2021 and calibration certificate result shows Energy Meter are working properly throughout the period since last calibration done in 15-02-2017. The latest calibration certificates submitted to DOE for verification.	
4	Shiva	U-1854	HT2160232	21-04-2010	21-04-2011	Sep-13	Feb-17
				16-02-2017	15-02-2018	Feb-18	Sep-18
				16-02-2021	15-02-2022	There is further delay in calibration beyond the end of the current monitoring period, the PP has calibrated the Energy Meters of 16-02-2021 and calibration certificate result shows Energy Meter are working properly throughout the period since last calibration done in 16-02-2017. The latest calibration certificates submitted to DOE for verification.	
5	Shiva	U-1858	HT2160878	20-05-2010	19-05-2011	Sep-13	Feb-17
				15-02-2017	14-02-2018	Feb-18	Sep-18
				18-02-2021	17-02-2022	There is further delay in calibration beyond the end of the current monitoring period, the PP has calibrated the Energy Meters of 18-02-2021 and calibration certificate result shows Energy Meter are working properly throughout the period since last calibration done in 15-02-2017. The latest calibration certificates submitted to DOE for verification.	
6	Shiva	U-1860	HT2160879	20-05-2010	19-05-2011	Sep-13	Feb-17
				15-02-2017	14-02-2018	Feb-18	Sep-18
				15-02-2021	14-02-2022	There is further delay in calibration beyond the end	



						of the current monitoring period, the PP has calibrated the Energy Meters of 15-02-2021 and calibration certificate result shows Energy Meter are working properly throughout the period since last calibration done in 15-02-2017. The latest calibration certificates submitted to DOE for verification.
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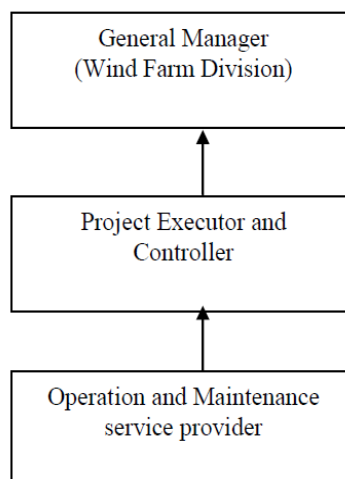
Thus, from the table above it is evident that during entire monitoring period of **23/09/2013 – 31/08/2018** (Inclusive of both the dates), last calibration of energy meters were conducted in the Month of February in the year 2017 which was valid up to one year, the due date fall in February, 2018, as per the dates respective to each WTG mentioned in table above. Later, in the Month of February in the year 2021 calibration was done which is currently valid for one year for each WTG respective to the dates mentioned in the table above. Thus, delay in the conduction of next calibration i.e. calibration delay period observed under current monitoring period and error factor has been applied from **23 September 2013 to 09 March 2017**. Further because of 2<sup>nd</sup> calibration delay period, the error factor is applied from **09 January 2018 to 31 August 2018**. **Refer the emission-reduction sheet for billing-period vis-à-vis billing-month of TENGEDCO and applied error factor..**

The project activity is operated and managed by O&M (Operations and Maintenance) contractor. For the execution of the project activity a project team has been designated. The project team is delegated with the responsibility to monitor and document the electricity generated and also safe keeping of the recorded data. All the monitoring data is stored/will be recorded and kept under safe custody.

The organizational structure for the monitoring plan for the project is shown below:

<b>Designation</b>	<b>Responsibilities</b>
General Manager (Wind Farm Division)	Holds complete control over monitoring aspects pertaining to the project
Project Executor and Controller	Recording Verification Storage of Data
Operation and Maintenance service provider	Operation and Maintenance Storage of data

## Organizational structure for monitoring plan



## SECTION D. Data and parameters

## D.1. Data and parameters fixed ex ante

Data/Parameter	$EF_{grid,OM,y}$
Unit	tCO <sub>2</sub> /MWh
Description	The Operating Margin emission factor of southern grid
Source of data	Central Electricity Authority of India (CEA), CO <sub>2</sub> Database, Version 6.0
Value(s) applied	0.9863
Choice of data or measurement methods and procedures	The Operating Margin is calculated considering of the average of Operating Margin date for the Southern grid as published by CEA during the recent three years 2006-07, 2007-08 and 2008-09. The average value for the Southern grid is 0.9875 tCO <sub>2</sub> /MWh
Purpose of data/parameter	Calculation of baseline emission
Additional comments	This parameter is fixed ex-ante.

Data/Parameter	$EF_{grid,BM,y}$
Unit	tCO <sub>2</sub> /MWh
Description	The Build Margin emission factor of southern grid
Source of data	Central Electricity Authority of India (CEA), CO <sub>2</sub> Database, Version 6.0, March, 2011
Value(s) applied	0.8179
Choice of data or measurement methods and procedures	The build margin considered is for the year 2008-09 for the Southern grid and the value is 0.82 tCO <sub>2</sub> /MWh.
Purpose of data/parameter	Calculation of baseline emission
Additional comments	This parameter is fixed ex-ante.

Data/Parameter	$EF_{grid,CM,y}$
Unit	tCO <sub>2</sub> /MWh
Description	The Emission factor of the Southern grid
Source of data	Calculated
Value(s) applied	0.9442

Choice of data or measurement methods and procedures	Calculated as the weighted average of the build margin emission factor and operating margin emission factor. The weights used are 0.75 and 0.25 for operating margin and build margin respectively.
Purpose of data/parameter	Calculation of baseline emission
Additional comments	The value is calculated on ex-ante basis and it will remain same throughout the crediting period.

## D.2. Data and parameters monitored

Data/Parameter	EG <sub>y</sub> (Export)
Unit	MWh/y
Description	Quantity of electricity exported to the grid in year y
Measured/calculated/Default	Measured
Source of data	Monthly electricity generation statement issued by state utility - Tamil Nadu Electricity Board (TNEB)
Value(s) of monitored parameter	101,787 (Month value of parameter are provided in ER sheet)
Monitoring equipment	Please refer section 'C' (Description of monitoring system) for the details of meter type, accuracy class, serial number, calibration frequency, date of last calibration and validity under the heading 'Calibrations Details of Meters'.
Measuring/reading/recording frequency	Frequency of recording data: Metering equipment's measures the electricity export on continuous basis and recorded by state utility on monthly basis.  Refer section C for an illustration of the provisions for measurement methods.
Calculation method (if applicable)	EG <sub>y</sub> (Export) --TNEB will issue a WEG wise monthly generation statement.
QA/QC procedures	Meter calibration shall be conducted annually by the relevant department of the state electricity board in accordance with the local calibration standards as mentioned in Section C. Meter accuracy: 0.2 of the meter at respective substations that would be used for the exported electricity metering.
Purpose of data/parameter	Calculation of baseline emission
Additional comments	The data will be archived electronically for two years after the crediting period or of the last issuance of CERs of this project activity, whichever later. There can be a slight variation in the LCS reading and the meter reading recorded at the TNEB metering point. This is because of a difference in the time at which the meter readings are taken at the LCS and the TNEB metering point.

Data/Parameter	EG <sub>y</sub> (Import)
Unit	MWh/y
Description	Quantity of electricity imported from the grid in year y
Measured/calculated/default	Measured
Source of data	Monthly electricity generation statement issued by state utility - Tamil Nadu Electricity Board (TNEB)
Value(s) of monitored parameter	929 (Month value of parameter are provided in ER sheet)

Monitoring equipment	Please refer section 'C' (Description of monitoring system) for the details of meter type, accuracy class, serial number, calibration frequency, date of last calibration and validity under the heading 'Calibrations Details of Meters'.
Measuring/reading/recording frequency	Frequency of recording data: Metering equipment's measures the electricity export on continuous basis and recorded by state utility on monthly basis.  Refer section C for an illustration of the provisions for measurement methods.
Calculation method (if applicable)	EGy (Import)--TNEB will issue a WEG wise monthly generation statement.
QA/QC procedures	Meter calibration shall be conducted annually by the relevant department of the state electricity board in accordance with the local calibration standards as mentioned in Section C. Meter accuracy: 0.2 of the meter at respective substations that would be used for the exported electricity metering.
Purpose of data/parameter	Calculation of baseline emission
Additional comments	The data will be archived electronically for two years after the crediting period or of the last issuance of CERs of this project activity, whichever later.  There can be a slight variation in the LCS reading and the meter reading recorded at the TNEB metering point. This is because of a difference in the time at which the meter readings are taken at the LCS and the TNEB metering point.

<b>Data/Parameter</b>	<b>EG<sub>y</sub></b>
Unit	MWh/y
Description	Quantity of net electricity supplied to the grid in year y
Measured/calculated/default	Calculated
Source of data	Monthly electricity generation statement issued by state utility - Tamil Nadu Electricity Board (TNEB)
Value(s) of monitored parameter	100,858 (Month value of parameter are provided in ER sheet)
Monitoring equipment	Please refer section 'C' (Description of monitoring system) for the details of meter type, accuracy class, serial number, calibration frequency, date of last calibration and validity under the heading 'Calibrations Details of Meters'.
Measuring/reading/recording frequency	Frequency of recording data: Net electricity supplied to grid (export – import) is measured on continuous basis and data is recorded by state utility on monthly basis.  Refer section C for an illustration of the provisions for measurement methods.
Calculation method (if applicable)	<b>EG<sub>y</sub> Calculated as the difference between EG<sub>y</sub> (Export) – EG<sub>y</sub> (Import)</b>
QA/QC procedures	Meter calibration shall be conducted annually by the relevant department of the state electricity board in accordance with the local calibration standards as mentioned in Section C Meter accuracy: 0.2 of the meter at respective substations that would be used for the exported electricity metering.
Purpose of data/parameter	To calculate emission reduction achieved by project activities.
Additional comments	The data will be archived Paper/electronically for two years after the crediting period or of the last issuance of CERs of this project activity, whichever later.  There can be a slight variation in the LCS reading and the meter reading recorded at the TNEB metering point. This is because of a difference in the time at which the meter readings are taken at the LCS and the TNEB metering point.

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

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Not Applicable.

**SECTION E. Calculation of emission reductions or net anthropogenic removals****E.1. Calculation of baseline emissions or baseline net removals**

&gt;&gt;

The emission reduction  $ER_y$  due to project activity during a given year  $y$  is calculated as the difference between baseline emissions ( $BE_y$ ), project emissions ( $PE_y$ ) and emissions due to leakage ( $LE_y$ ) as per the formula given below:

$$ER_y = BE_y - PE_y - LE_y$$

**Baseline Emissions:**

$$BE_y = EG_{BL,y} \times EF_{CO_2}$$

$EG_{BL,y}$  = Quantity of net electricity displaced as a result of the implementation of the CDM project activity in year  $y$  (MWh) = 100,860 MWh

$F_{CO_2}$  = CO<sub>2</sub> emission factor of the grid in year  $y$  = 0.9442 tCO<sub>2</sub>/MWh (Fixed Ex-ante)

Baseline Emissions in year  $y$

$$BE_y = 100,858 \text{ MWh} \times 0.9442 \text{ tCO}_{2e}/\text{MWh}$$

$$= 95,229 \text{ tCO}_{2e}$$

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

&gt;&gt;

Since the project activity is a renewable energy project that generates electricity using wind power and hence does not result in project emissions.

$$PE_y = 0 \text{ tCO}_2/\text{y}$$

**E.3. Calculation of leakage emissions**

&gt;&gt;

No leakage is considered from the project activity as per approved methodology AMS I.D. Version 17.

$$LE_y = 0 \text{ t CO}_2/\text{y}$$

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

	Baseline GHG emissions	Project GHG emissions	Leakage GHG emissions	GHG emission reductions or net anthropogenic GHG removals (t CO <sub>2e</sub> )
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				Before 01/01/ 2013	From 01/01/ 2013 until 31/12/ 2020	From 01/01/ 2021	Total amount
<b>Total</b>	95,229	0	0	0	95,229	0	95,229

**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 <sub>2</sub> e)	Amount estimated ex ante for this monitoring period in the PDD (t CO <sub>2</sub> e)
95,229	120,398

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

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As per registered CDM-PDD (version 04.1, dated: 20/09/2013), the annual estimated volume of CERs is 24,360 tCO<sub>2e</sub>. The total nos. of days included in this mentoring period (i.e. 23/09/2013 to 31/08/2018, inclusive of both the days) = 1,804. Thus, to calculate the ex-ante estimated value of ER corresponding to this monitoring period, the annual estimated ER value (as per registered PDD) has been extrapolated for the equivalent period, i.e. 1804 days, which results in 120,398 tCO<sub>2e</sub>. Whereas actual ER achieved is 95,229 tCO<sub>2e</sub>. The detailed calculation has been provided in ER calculation sheet.

**E.6. Remarks on increase in achieved emission reductions**

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There is no increase in the emission reductions during the current monitoring period relative to the estimation in the registered CDM-PDD. There is only around - 20.90% lesser emission reduction relative to estimation in the registered CDM- PDD for the equivalent duration of the monitoring period. This has happened due to low wind availability leading to low PLF during the current monitoring period.

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

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There is no change in the capacity of project activity since commissioning. The project capacity is 9.9 MW (6 WTGs X 1650kW), scale of the project activity belonging to the same small-scale project type (Type-I, AMS-I.D.) and remained under the limit (<=15MW) type every year during the crediting period.

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**Document information**

<i>Version</i>	<i>Date</i>	<i>Description</i>
09.0	8 October 2021	Revision to: <ul style="list-style-type: none"> <li>• Ensure consistency with version 03.0 of the “CDM project standard for project activities” (CDM-EB93-A04-STAN).</li> </ul>
08.0	6 April 2021	Revision to: <ul style="list-style-type: none"> <li>• Reflect the “Clarification: Regulatory requirements under temporary measures for post-2020 cases” (CDM-EB109-A01-CLAR).</li> </ul>
07.0	31 May 2019	Revision to: <ul style="list-style-type: none"> <li>• Ensure consistency with version 02.0 of the “CDM project standard for project activities” (CDM-EB93-A04-STAN);</li> <li>• Add a section on remarks on the observance of the scale limit of small-scale project activity during the crediting period;</li> <li>• Add "changes specific to afforestation or reforestation project activity" as a possible post-registration changes;</li> <li>• Clarify the reporting of net anthropogenic GHG removals for A/R project activities between two commitment periods;</li> <li>• Make editorial improvements.</li> </ul>
06.0	7 June 2017	Revision to: <ul style="list-style-type: none"> <li>• Ensure consistency with version 01.0 of the “CDM project standard for project activities” (CDM-EB93-A04-STAN);</li> <li>• Make editorial improvements.</li> </ul>
05.1	4 May 2015	Editorial revision to correct version numbering.
05.0	1 April 2015	Revisions to: <ul style="list-style-type: none"> <li>• Include provisions related to delayed submission of a monitoring plan;</li> <li>• Provisions related to the Host Party;</li> <li>• Remove reference to programme of activities;</li> <li>• Overall editorial improvement.</li> </ul>
04.0	25 June 2014	Revisions to: <ul style="list-style-type: none"> <li>• Include the Attachment: Instructions for filling out the monitoring report form (these instructions supersede the "Guideline: Completing the monitoring report form" (Version 04.0));</li> <li>• Include provisions related to standardized baselines;</li> <li>• Add contact information on a responsible person(s)/ entity(ies) for completing the CDM-MR-FORM in A.6 and Appendix 1;</li> <li>• Change the reference number from <i>F-CDM-MR</i> to <i>CDM-MR-FORM</i>;</li> <li>• Editorial improvement.</li> </ul>
03.2	5 November 2013	Editorial revision to correct table in page 1.

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.1	2 January 2013	Editorial revision to correct table in section E.5.
03.0	3 December 2012	Revision required to introduce a provision on reporting actual emission reductions or net GHG removals by sinks for the period up to 31 December 2012 and the period from 1 January 2013 onwards (EB70, Annex 11).
02.0	13 March 2012	Revision required to ensure consistency with the "Guidelines for completing the monitoring report form" (EB 66, Annex 20).
01.0	28 May 2010	EB 54, Annex 34. Initial adoption.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: monitoring report		