



**Monitoring report form for CDM project activity**  
**(Version 06.0)**

**MONITORING REPORT**

<b>Title of the project activity</b>	21 MW Wind energy farm at Palladam, TamilNadu by HZL	
<b>UNFCCC reference number of the project activity</b>	8198 <sup>1</sup>	
<b>Version number of the PDD applicable to this monitoring report</b>	03.1	
<b>Version number of this monitoring report</b>	01	
<b>Completion date of this monitoring report</b>	27/03/2019	
<b>Monitoring period number</b>	01	
<b>Duration of this monitoring period</b>	01-Dec-2013 to 8-Dec-2016 (inclusive of both days)	
<b>Monitoring report number for this monitoring report</b>	NA	
<b>Project participants</b>	M/s Hindustan Zinc Limited	
<b>Host Party</b>	INDIA	
<b>Sectoral scopes</b>	1 : Energy industries (renewable - / non-renewable sources)	
<b>Applied methodologies and standardized baselines</b>	Methodologies: ACM0002 ver. 12 - Consolidated baseline methodology for grid-connected electricity generation from renewable sources  Standard Baselines: Not applicable	
<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
	0	98,022 tCO <sub>2</sub> e

<sup>1</sup> <http://cdm.unfccc.int/Projects/DB/DNV-CUK1352807242.64/view>

<b>Amount of GHG emission reductions or net anthropogenic GHG removals estimated ex ante for this monitoring period in the PDD</b>	127,432 tCO <sub>2</sub> e
--	----------------------------

## SECTION A. Description of project activity

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

Hindustan Zinc Ltd. (HZL), a vertically integrated natural resources enterprise, headquartered at Udaipur, Rajasthan having broad operations ranging from exploration, mining, ore processing to smelting of nonferrous metals is the owner and project proponent of the project activity.

#### Purpose of the Project Activity

The project activity primarily aims at reducing Green House Gas (GHG) emissions through utilization of renewable energy technology for generation of electrical energy. The electricity generated from the project site displaces equivalent electricity generation in grid connected power plants. The project activity reduces the anthropogenic GHG emissions associated with the equivalent amount of electricity generation from the fossil fuel based grid connected power plants.

#### Measures Implemented within the Proposed Project Activity

The cumulative capacity of the project activity is 21 MW comprising of fourteen Suzlon make 1.5 MW Wind Turbine Generators (WTGs) by Hindustan Zinc Limited (HZL) in the state of Tamil Nadu. The electricity generated from the wind farm is exported to regional Grid.

#### Baseline Scenario

The project activity is a Greenfield wind power project, supplying electricity to the fossil fuel dominated Southern Grid of India. In the absence of the project activity equivalent amount of electricity would have been generated in the Southern Grid (now Indian Grid). Since the wind power project is a Greenfield project, there is no difference between the pre-project scenario and the baseline scenario.

The total GHG emission reduction in this monitoring period 1<sup>st</sup> Dec 2013 to 8<sup>th</sup> Dec 2016 (inclusive of both dates) is 98,022 tCO<sub>2e</sub>.

No major breakdown was experienced during the said monitoring period apart from the scheduled shutdown for maintenance.

### A.2. Location of project activity

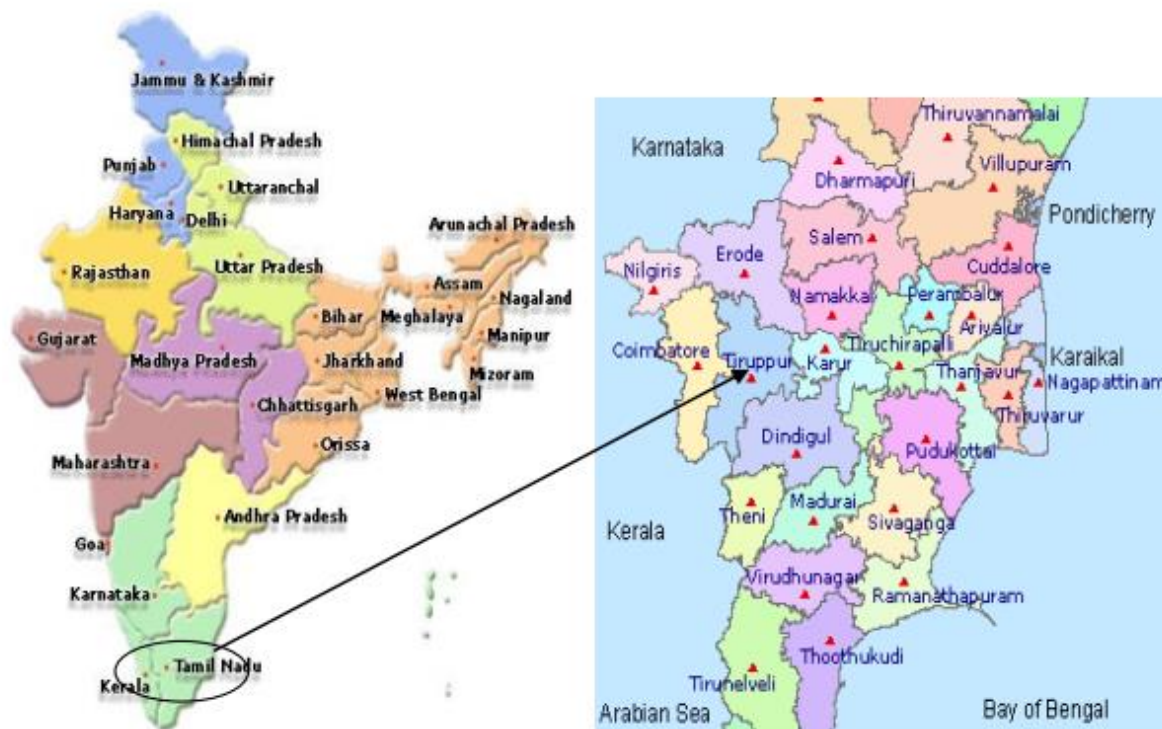
Villages: Suriyanallur, Kurukkapalayam, Nelali, Kozhumankuli, Kundadam, Uthiyur and Nandanvanapalayam  
 District: Tiruppur  
 State: Tamil Nadu  
 Country: INDIA

The project activity consists of Fourteen 1.5 MW wind turbines in the district of Tiruppur in the state of Tamil Nadu, India. The specific geographical coordinates of the individual WEGs are as follows:

Sr. No.	WTG. No.	Latitude	Longitude
1	KD176	N 10 52 02.9	E 77 27 31.8
2	KDE80	N 10 54 07.8	E 77 29 11.2
3	TAY52	N 10 56 12.0	E 77 29 07.2
4	TAY54	N 10 55 34.0	E 77 28 46.5
5	KDE84	N 10 54 35.0	E 77 29 27.6
6	TAY29	N 10 52 26.0	E 77 29 30.2
7	Q165	N 10 51 43.3	E 77 25 52.6
8	Q132	N 10 52 57.4	E 77 24 51.9
9	Q133	N 10 52 58.2	E 77 25 11.3
10	KDE92	N 10 54 21.7	E 77 30 22.5

11	TAY46	N 10 55 38.7	E 77 29 38.1
12	TAY48	N 10 55 38.5	E 77 29 59.3
13	TAY47	N 10 51 9.5	E 77 23 57.6
14	KD 112	N 10 55 18.7	E 77 30 2.1

The project activity location is delineated in the maps given below:



### 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)	M/s Hindustan Zinc Limited (Private Entity)	No

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

**Title of the approved baseline and monitoring methodology:** "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".

**Reference:** ACM0002, Version 12.3.0 (EB 66)<sup>2</sup>

The following tools and guidance's have been followed (References):

- Tool to calculate the emission factor for an electricity system (Version 02.2.1)<sup>3</sup>

<sup>2</sup> <https://cdm.unfccc.int/filestorage/4/W/1/4W1SCKX3EMPO6AYGRJUTD7BQ8IVN0H/Consolidated%20baseline%20methodology%20for%20grid-connected%20electricity%20generation%20from%20renewable%20sources.pdf?t=NGV8cG9qd2hnfDCF6bqIA0TGMzhiK4teIGI>

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

- Tool for the demonstration and assessment of additionality (Version 06.0.0)<sup>4</sup>

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

Type of crediting period	Renewable
Crediting period from	01 Dec 13 - 30 Nov 20
Length of the Crediting Period	7 Years
Current Monitoring period from	01-Dec-2013 to 08-Dec-2016 (First and Last date included)
Length of the Monitoring Period	1104 days

## SECTION B. Implementation of project activity

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

The technology employed by the project activity converts kinetic energy in wind to mechanical energy and mechanical energy to electrical energy using wind turbine generators (WTGs). In this process, there are no greenhouse gas emissions or burning of any fossil fuels. The electricity is generated through sustainable means without causing any negative effect to the environment and therefore the technology is environmentally safe and sound.

The technical specifications of the WTGs are as below:

#### WTG (S82, 1.5 MW, 50 Hz) TECHNICAL DATA

Rated capacity : 1500 kW  
 Rotor diameter : 82 m  
 Hub height : 78.5 m

#### Rotor with Pitch Control

Type : Upwind rotor with active pitch control  
 Number of blades : 3  
 Swept area : 5281 m<sup>2</sup>  
 Blade material : The rotor blades are made epoxy bonded fibreglass  
 Rotor speed : 16.30 rpm  
 Tip speed : 70 m/s

#### Generator:

Type : Single fed Induction Generator with slip-rings, variable rotor resistance with SUZLON-FLEXI-SLIP control system.

Hub : Cast spherical hub

Bearings : Spherical roller bearing

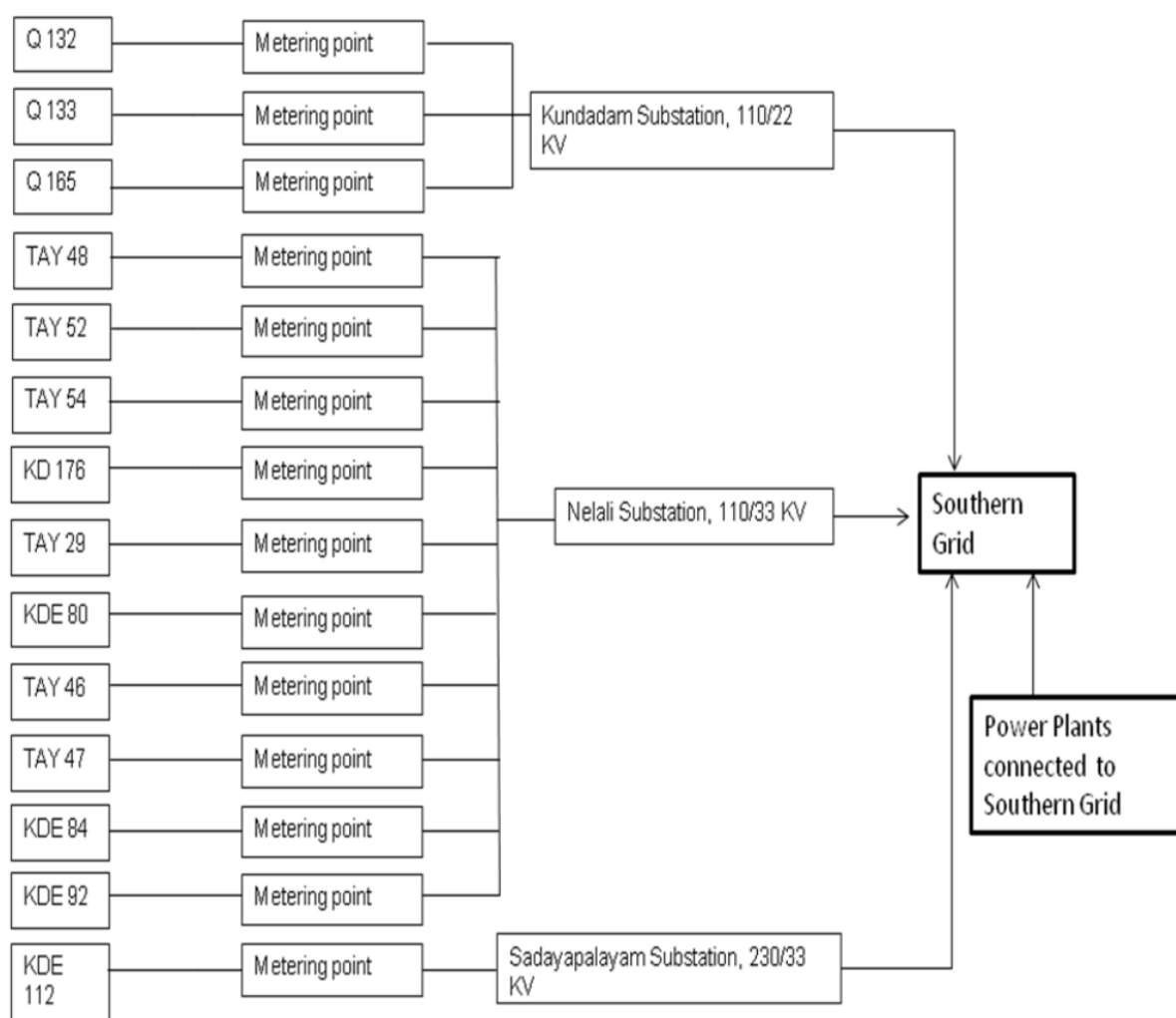
Tower : Steel Tubular, 76 m height

#### Technology Transfer

No technology transfer from other countries is involved in the project.

The schematic diagram of the project activity is as follows: -

<sup>4</sup> <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v6.0.0.pdf>



The details of the commissioning of the project is as follows:

Location	Date of Commissioning	Load
U 2176, U 2177, U 2178	20/10/2011	4.5 MW
U 2180	26/12/2011	1.5 MW
TZA-11,12,13,14,15,16,17,18,19,20	10/02/2012	15 MW

## B.2. Post-registration changes

### B.2.1. Temporary deviations from the registered monitoring plan, applied methodologies or standardized baselines

No temporary deviations from the registered monitoring plan, applied methodologies or standardized baselines.

**B.2.2. Corrections**

Not Applicable

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

The new crediting period is 01-Dec 13 - 30 Nov 20 (Renewable) changed from: 01 Dec 12 - 30 Nov 19 as visible on UNFCCC CDM website<sup>5</sup>.

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

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 applied standards or tools**

Not Applicable

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

Not Applicable.

**SECTION C. Description of monitoring system**

The purpose of the monitoring plan is to define the organizational structure of the monitoring team, monitoring practices, QA and QC procedures and archiving procedures. The monitoring plan ensures that the emission reductions from the project activity are reported accurately and transparently.

**Roles and Responsibilities of the Monitoring Team**

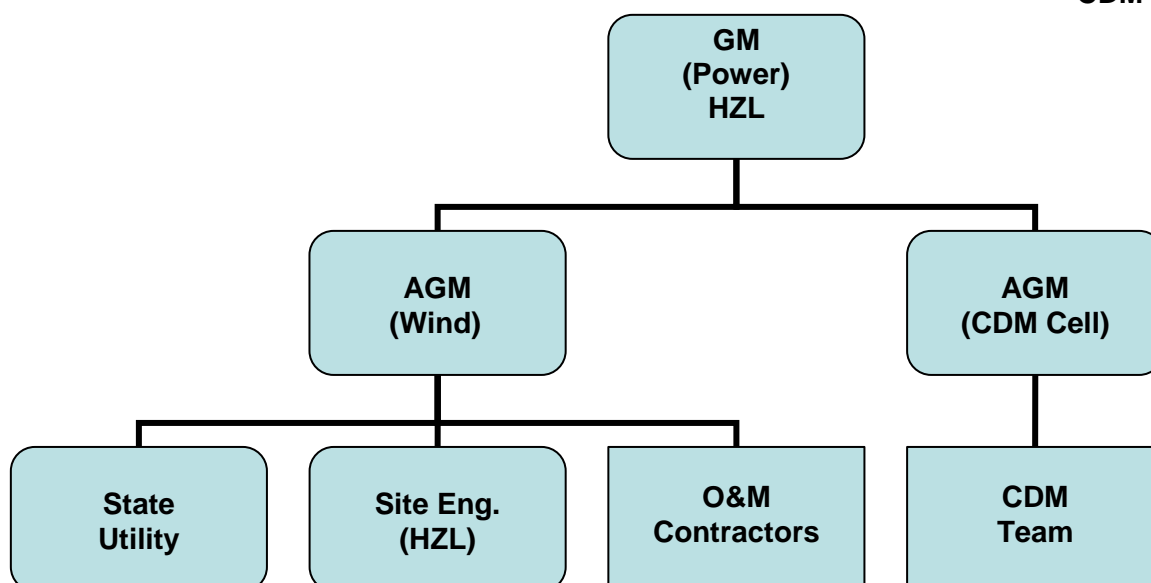
The authority and responsibility of project management as well as registration, monitoring, measurement and reporting lies with HZL. The project proponent has formulated a Monitoring Team to ensure proper and continuous monitoring of the emission reductions as well as performance of turbines and generation of power.

To ensure trouble free operation of all the wind turbines, HZL has entered into a comprehensive Operation and Maintenance agreement with the manufactures of the turbines. The contractor, Suzlon Infrastructure Limited, are responsible for the operation and maintenance of the WTGs. The O&M personnel are qualified engineers and are trained at the WEG manufacturing facility of Suzlon Infrastructure Limited.

The monitoring team interacts with the O&M contractors as well as the State Utility officials for executing the monitoring plan. The structure of the Monitoring Team is as follows:

---

<sup>5</sup> <http://cdm.unfccc.int/Projects/DB/DNV-CUK1352807242.64/view>



Monitoring Team	Roles & Responsibilities
General Manager (Power), HZL	<ul style="list-style-type: none"> <li>• Communication with CDM EB</li> <li>• Communication with state utility</li> </ul>
AGM (CDM Cell), HZL	<ul style="list-style-type: none"> <li>• Overall coordination with monitoring team and DOE for verification activities</li> <li>• Maintaining data records, documentation and archiving</li> </ul>
CDM Team	Assisting the General Manager (Wind) with overall coordination and with maintaining data records, documentation, archiving etc.
AGM (Wind) HZL	Coordinating with Site Engineer, O&M operators, and State Utility
Site Engineer, HZL	<ul style="list-style-type: none"> <li>• Overseeing monitoring, operation and maintenance activities at site</li> <li>• Interacting with State Utility and O&amp;M contractors for JMRs and calibration</li> </ul>
O&M contractors	<ul style="list-style-type: none"> <li>• Carrying out operation &amp; maintenance of WTGs</li> <li>• Carrying out joint meter readings with state utility</li> </ul>
State Utility	<ul style="list-style-type: none"> <li>• Carrying out joint meter readings with representative of project proponent (O&amp;M contractors)</li> <li>• Calibration of energy meters</li> </ul>

### Quality control and Quality Assurance procedures:

#### Calibration Procedures:

Energy meters are installed at each WTG for monitoring the energy exported and imported. The energy meters are tested for accuracy at least once in three years with reference to a portable standard meter. The meters are deemed to be working satisfactorily if the errors are within specifications for meters of 0.2 accuracy class. The data registered by the energy meter is adopted for the purpose of emission reduction calculation as long as the error in the main meter is within permissible limits. If the energy meter is found to be beyond the permissible limits of error, TNEB officials shall be notified for rectification or replacement of the meter. The rectified / replaced energy meter would be calibrated.



## Data collection and archiving

Monthly data is collected and maintained in hard copy (copies of TNEB statements). The project proponent shall keep complete and accurate records of all the data as a part of monitoring for at least a period of 2 years after the end of the crediting period or the last issuance of CERs for the project activity, whichever occurs later.

## SECTION D. Data and parameters

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

Data/Parameter	EF <sub>grid,OM,y</sub>																
Unit	tCO <sub>2</sub> /MWh																
Description	Operating Margin emission factor for Southern grid																
Source of data	Referred from CO <sub>2</sub> Baseline Database for the Indian Power Sector prepared by Central Electricity Authority Version 6.0.																
Value(s) applied	0.9671																
Choice of data or measurement methods and procedures	<p>The operating margin emission factor has been published by CEA in accordance with the 'Tool to calculate the emission factor for an electricity system.' The option of ex ante calculation based on Simple Operating Margin Method have been applied using a three year generation weighted average (2007-08, 2008-09 and 2009-10) as given below:</p> <table border="1"> <thead> <tr> <th colspan="2">Operating Margin Estimation for Southern Grid (tCO<sub>2</sub>/MWh)</th></tr> </thead> <tbody> <tr> <td>OM 2007-08</td><td>0.9909</td></tr> <tr> <td>OM 2008-09</td><td>0.9729</td></tr> <tr> <td>OM 2009-10</td><td>0.9415</td></tr> <tr> <td>Net Electricity Generated (GWh), 2007-08</td><td>114634</td></tr> <tr> <td>Net Electricity Generated (GWh), 2008-09</td><td>121471</td></tr> <tr> <td>Net Electricity Generated (GWh), 2009-10</td><td>134717</td></tr> <tr> <td><b>Average OM (EF<sub>grid, OM,y</sub>)</b></td><td><b>0.9671</b></td></tr> </tbody> </table>	Operating Margin Estimation for Southern Grid (tCO <sub>2</sub> /MWh)		OM 2007-08	0.9909	OM 2008-09	0.9729	OM 2009-10	0.9415	Net Electricity Generated (GWh), 2007-08	114634	Net Electricity Generated (GWh), 2008-09	121471	Net Electricity Generated (GWh), 2009-10	134717	<b>Average OM (EF<sub>grid, OM,y</sub>)</b>	<b>0.9671</b>
Operating Margin Estimation for Southern Grid (tCO <sub>2</sub> /MWh)																	
OM 2007-08	0.9909																
OM 2008-09	0.9729																
OM 2009-10	0.9415																
Net Electricity Generated (GWh), 2007-08	114634																
Net Electricity Generated (GWh), 2008-09	121471																
Net Electricity Generated (GWh), 2009-10	134717																
<b>Average OM (EF<sub>grid, OM,y</sub>)</b>	<b>0.9671</b>																
Purpose of data/parameter	For the calculation of the Baseline Emission																
Additional comments	This value is determined ex-ante and will be fixed for the crediting period																

Data/Parameter	EF <sub>grid,BM,y</sub>
Unit	tCO <sub>2</sub> /MWh
Description	Build Margin emission Factor for Southern grid
Source of data	Referred from CO <sub>2</sub> Baseline Database for the Indian Power Sector prepared by Central Electricity Authority, Version 6.0.
Value(s) applied	0.7634
Choice of data or measurement methods and procedures	<p>The build margin emission factor has been published by CEA in accordance with the 'Tool to calculate the emission factor for an electricity system.' The build margin is calculated as the average emissions intensity of the 20% most recent capacity additions in the grid based on net generation. The build margin has been taken corresponding to the year 2009-10, the latest year</p>

	for which data is available
Purpose of data/parameter	For the calculation of the Baseline Emission
Additional comments	This value is determined ex-ante and will be fixed for the crediting period

<b>Data/Parameter</b>	<b><math>EF_{grid,CM,y}/EF_{CO2,grid,y}</math></b>								
Unit	tCO <sub>2</sub> /MWh								
Description	Combined Margin CO <sub>2</sub> emission factor for Southern grid								
Source of data	Estimated figure based on 75% of OM and 25% of BM values								
Value(s) applied	0.9161								
Choice of data or measurement methods and procedures	<p>The combined margin emission factor has been determined based on data published by the CEA, applying a 75% weightage for <math>EF_{grid,OM,y}</math> and 25% for <math>EF_{grid,BM,y}</math> in accordance with the 'Tool to calculate the emission factor for an electricity system.'</p> <table border="1"> <thead> <tr> <th colspan="2">Combined Margin Estimation for southern Grid (tCO<sub>2</sub>/MWh)</th></tr> </thead> <tbody> <tr> <td>Operating Margin (<math>EF_{grid,OM,y}</math>)</td><td>0.9671</td></tr> <tr> <td>Build Margin (<math>EF_{grid,BM,y}</math>)</td><td>0.7634</td></tr> <tr> <td>Combined Margin (<math>EF_{CO2,grid,y}</math>)</td><td>0.9161</td></tr> </tbody> </table>	Combined Margin Estimation for southern Grid (tCO <sub>2</sub> /MWh)		Operating Margin ( $EF_{grid,OM,y}$ )	0.9671	Build Margin ( $EF_{grid,BM,y}$ )	0.7634	Combined Margin ( $EF_{CO2,grid,y}$ )	0.9161
Combined Margin Estimation for southern Grid (tCO <sub>2</sub> /MWh)									
Operating Margin ( $EF_{grid,OM,y}$ )	0.9671								
Build Margin ( $EF_{grid,BM,y}$ )	0.7634								
Combined Margin ( $EF_{CO2,grid,y}$ )	0.9161								
Purpose of data/parameter	For the calculation of the Baseline Emission								
Additional comments	This value is determined ex-ante and will be fixed for the crediting period								

## D.2. Data and parameters monitored

<b>Data/Parameter</b>	<b><math>EG_{BL,y} (EG_{y,export} - EG_{y,import})</math></b>
Unit	MWh
Description	Net electricity exported to the southern grid by the project
Measured/calculated/default	Calculated
Source of data	Statements issued by TNEB to the project proponent on electricity generation
Value(s) of monitored parameter	107,019 MWh
Monitoring equipment	Energy Meter
Measuring/reading/recording frequency	Monitoring Frequency: Daily Recording Frequency: Monthly
Calculation method (if applicable)	<p>The Net electricity exported is difference of electricity exported to the grid and electricity imported from the grid.</p> <p><b><math>EG_{BL,y} = EG_{y,export} - EG_{y,import}</math></b></p>
QA/QC procedures	<p>The values can be cross checked with the invoice raised by the project proponent/ supplier to TNEB for the electricity supplied to the southern grid. However, as per latest practise of Tamil Nadu Generation and Distribution Corporation Ltd., they have considered the Distribution Line Loss for calculating Net Generation. Hence, the same has been considered in calculation of net power exported to the grid.</p>

Purpose of data/parameter	Calculation of Baseline emissions
Additional comments	The data is kept for two years after the crediting period or from last issuance.

<b>Data/Parameter</b>	<b>EG<sub>y,export</sub></b>
Unit	MWh
Description	Electricity exported to the state electricity board by the project activity
Measured/calculated/default	Measured
Source of data	Statements issued by TNEB to the project proponent on electricity generation
Value(s) of monitored parameter	110,558
Monitoring equipment	Energy Meter
Measuring/reading/recording frequency	Monitoring Frequency: Daily Recording Frequency: Monthly
Calculation method (if applicable)	Not Applicable
QA/QC procedures	In order to ensure the optimum accuracy levels the monitoring equipment used for measuring the parameter, the energy meters are calibrated at least once in three years. For detailed schedule of calibration during present monitoring period please refer Annexure 1.
Purpose of data/parameter	Calculation of Baseline emissions
Additional comments	The data is kept for two years after the crediting period or from last issuance.

<b>Data/Parameter</b>	<b>EG<sub>y,import</sub></b>
Unit	MWh
Description	Electricity imported from the southern grid. This is a monitored parameter
Measured/calculated/default	Measured
Source of data	Statements issued by TNEB to the project proponent on electricity generation
Value(s) of monitored parameter	1,119
Monitoring equipment	Energy Meter
Measuring/reading/recording frequency	Monitoring Frequency: Daily; Measuring Frequency: Monthly
Calculation method (if applicable)	Not Applicable
QA/QC procedures	In order to ensure the optimum accuracy levels the monitoring equipment used for measuring the parameter the energy meters are calibrated at least once in three years. For detailed schedule of calibration during present monitoring period please refer Annexure 1.
Purpose of data/parameter	Calculation of Baseline emissions

Additional comments	The data is kept for two years after the crediting period or from last issuance.
---------------------	--

### 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

#### Emission Reductions

The project activity mainly reduces carbon dioxide through substitution of grid electricity generation with fossil fuel fired power plants by renewable electricity. The emission reduction  $ER_y$  by the project activity during a given year  $y$  is the difference between baseline emissions ( $BE_y$ ), project emissions ( $PE_y$ ) and emissions due to leakage ( $LE_y$ ), as follows:

$$ER_y = BE_y - PE_y - LE_y$$

where

$ER_y$	=	Emission reductions in year $y$ (t CO <sub>2</sub> /y)
$BE_y$	=	Baseline Emissions in year $y$ (t CO <sub>2</sub> /y)
$PE_y$	=	Project emissions in year $y$ (t CO <sub>2</sub> /y)
$LE_y$	=	Leakage emissions in year $y$ (t CO <sub>2</sub> /y)

#### Baseline Emissions:

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

Where:

$BE_y$	=	Baseline Emissions in year $y$ (tCO <sub>2</sub> )
$EG_{BL,y}$	=	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year $y$ (MWh)
$EF_{CO_2,grid,y}$	=	CO <sub>2</sub> Emission Factor in year $y$ (tCO <sub>2</sub> /MWh)

In accordance with the “Tool to calculate the emission factor for an electricity system” Version 02.2.1, combined margin CO<sub>2</sub> emission factor for grid connected power generation is calculated in section B.4 of the registered PDD.

The data used for the calculation of the baseline emission factor was obtained from the baseline calculations published by the CEA, *CO<sub>2</sub> Baseline Database for the Indian Power Sector – Version 6.0*<sup>6</sup> which uses “Tool to calculate the emission factor for an electricity system”. The relevant parts of the calculations are referenced in the methodology. A complete explanation of the assumptions employed by the CEA can be obtained from the *CO<sub>2</sub> Baseline Database for the Indian Power Sector -Version 6.0*.

$$BE_y = 107,719 \times 0.9161 = 98,022 \text{ tCO}_2\text{e}$$

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

There are no Project emissions from the project activity,  $PE_y = 0$ .

<sup>6</sup> [http://www.cea.nic.in/reports/planning/cdm\\_co2/user\\_guide\\_ver6.pdf](http://www.cea.nic.in/reports/planning/cdm_co2/user_guide_ver6.pdf)

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

Leakage emission is neglected as per the requirement of the methodology,  $LE_y = 0$

Hence,  $ER_y = BE_y - PE_y - LE_y$

where

$ER_y$  = Emission reductions in year y (t CO<sub>2</sub>/y)

$BE_y$  = Baseline Emissions in year y (t CO<sub>2</sub>/y)

$PE_y$  = Project emissions in year y (t CO<sub>2</sub>/y)

$LE_y$  = Leakage emissions in year y (t CO<sub>2</sub>/y)

$$= 98,022 - 0 - 0$$

$$= 98,022 \text{ tCO}_2\text{e}$$

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

	Baseline GHG emissions or baseline net GHG removals (t CO <sub>2</sub> e)	Project GHG emissions or actual net GHG removals (t CO <sub>2</sub> e)	Leakage GHG emissions (t CO <sub>2</sub> e)	GHG emission reductions or net anthropogenic GHG removals (t CO <sub>2</sub> e)		
				Before 01/01/2013	From 01/01/2013	Total amount
<b>Total</b>	98,022	0	0	0	98,022	98,022

**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 (t CO <sub>2</sub> e)
98,022	127,432

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

It is to be noted here that as per the registered PDD, the emission reductions during the current monitoring period was estimated to be 127,432 tCO<sub>2</sub>e, whereas actual emission reductions achieved are 98,022 tCO<sub>2</sub>e, which is approximately 23% lower than the estimated emission reductions. The generation of electricity depends upon the wind flow, which is influenced by natural phenomena and not within the control of the project participant

## Annexure 1: Meter Calibration Details

Location	HTSC No.	Main Meter	Check Meter	Calibration Date	Validity	Calibration Date	Validity
TAY29	TZA 11	TN 901795	TN 902631	06/02/2012	05/02/2015	31/01/2015	30/01/2018
KDE 80	TZA 12	TN 901793	TN 902632	06/02/2012	05/02/2015	31/01/2015	30/01/2018
KD 176	TZA 20	HT 2110564	TN 90633	06/02/2012	05/02/2015	31/01/2015	30/01/2018
TAY 52	TZA 18	TN 901794	TN 902630	06/02/2012	05/02/2015	31/01/2015	30/01/2018
TAY 54	TZA 19	TN 901802	TN 902641	06/02/2012	05/02/2015	31/01/2015	30/01/2018
KDE 84	TZA 13	TN 901798	TN 902634	06/02/2012	05/02/2015	31/01/2015	30/01/2018
KDE 92	TZA 14	TN 901797	TN 902629	06/02/2012	05/02/2015	31/01/2015	30/01/2018
TAY46	TZA 17	TN 902614	TN 902615	06/02/2012	05/02/2015	31/01/2015	30/01/2018
TAY 48	TZA 16	TN 901801	TN 902616	06/02/2012	05/02/2015	31/01/2015	30/01/2018
TAY 47	TZA 15	TN 901803	TN 902611	06/02/2012	05/02/2015	31/01/2015	30/01/2018
Q132	U2178	HT 2110435	HT2110707	18/10/2011	17/10/2014	15/10/2014	14/10/2017
Q133	U2177	HT 2110438	HT2110688	18/10/2011	17/10/2014	15/10/2014	14/10/2017
Q165	U2176	HT 2110427	HT2110686	18/10/2011	17/10/2014	15/10/2014	14/10/2017
KD 112	U 2180	HT 2110426	TN902664	24/12/2011	23/12/2014	20/12/2014	19/12/2017

## Annexure 2: Major Break down Details

Gen. Date	Breakdown Remark	Breakdown Hrs.
21-Apr-2014	Preventive Check	0.20
29-Apr-2014	Elec SafetyChainStop	0.20
01-May-2014	Pitch BatterySurveillance2	12.30
31-May-2014	Preventive Check	0.40
01-June-2014	Line Breakdown due to Earthfault	0.40
21-June-2014	Line Breakdown due to Earthfault	0.10
02-Aug-2014	Elec FB YawCW Error	8.40
22-Aug-2014	Pitch Akku1Voltage LowStop	6.00
02-Sep-2014	Elec FB GeneratorFan	0.10
03-Oct-2014	Preventive Check	3.10
07-Nov-2014	Rep Pitch FreqConvPitch2 ErrStop	0.70
27-Nov-2014	Rep Pitch CANComFail	0.60
07-Dec-2014	Elec UPSBattChange	3.40
11-Jan-2015	Rep Pitch CANComFail	6.90
31-Jan-2015	IDRV Audit	1.10
12-Feb-2015	Theft	3.70
22-Feb-2015	Shut Down Taken By EB	24.00
02-Mar-2015	Shut Down Taken By EB	24.00
22-Mar-2015	Shut Down Taken By EB	24.00
02-May-2015	Shut Down Taken By EB	24.00
22-May-2015	Shut Down Taken By EB	10.30
02-June-2015	Shut Down Taken By EB	24.00
28-July-2015	Shut Down Taken By EB	24.00
12-Aug-2015	Shut Down Taken By EB	24.00

-----

### Document information

Version	Date	Description
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.

<i>Version</i>	<i>Date</i>	<i>Description</i>
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.
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.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: monitoring report		