



VCS Project Monitoring Report

14.1 MW grid connected wind energy project
in Tamilnadu by ITC Limited.

Version 04

Monitoring period	- 20/09/2008 up to 13/03/2010
Document ID	- Monitoring Report/ITC 14.1 MW wind/VCS/04
Date	- 27 th August 2010

14.1 MW grid connected wind energy project in Tamilnadu by ITC Limited

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Project background

The VCS project with Title – “*14.1 MW grid connected wind energy project in Tamilnadu by ITC Limited*”, a registered CDM project (registered on 14th March 2010 by the CDM Executive Board, UNFCCC Project Reference No. # 3035) is undergoing verification in the VCS route for the period from commissioning of the WEGs till CDM registration.

ITC Limited has entered into this area of renewable energy generation to meet its own energy demand by installing 4 Wind Energy Generators (WEGs) of 1.65MW and 5 Wind Energy Generators (WEGs) of rating 1.5 MW, totaling to 14.1 MW, in Theni and Tirunelveli districts of Tamil Nadu. The four numbers of WEGs of 1.65MW is supplied by Vestas Wind Technology India Private Limited and the five numbers of WEGs of 1.5 MW are supplied by Suzlon Energy Ltd. The project activity is wheeling of power to the industrial facility of ITC Limited connected to Tamilnadu grid, which is a part of southern regional grid.

Project Location – All measures under this renewable energy generation programme have been implemented within the packaging and printing facility located at Tiruvottiyur, Chennai, Tamil Nadu. The WEGs are installed in districts of Theni and Tirunelveli of the state of Tamil Nadu.

Project description

ITC Ltd, in its packaging and printing facility, has installed 9 numbers of WEGs of total 14.1MW capacity (4 of 1.65MW and 5 of 1.5 MW). The main objective of this initiative is to meet the electricity requirement at the packaging and printing facility located at Tiruvottiyur, Chennai, Tamil Nadu in India. The project installs the model V82 Vestas-make WEGs of individual capacity of 1.65 MW and S82 Suzlon-make WEGs of 1.5 MW.

This project generates electricity from wind by converting the kinetic energy of wind to mechanical energy and then to electricity by using the generators.

The plant and machinery will be owned by ITC Limited, whereas the EPC contractors will be individually responsible for operation and maintenance of the machines supplied by them.

The project boundary encompasses the following:

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- Wind Energy Generators,
- The metering equipment for each generator and substation, and
- The grid which is used to transmit the generated electricity, the project is connected to the Southern regional electricity grid

All the Vestas WEGs are connected to Kamachipuram and Kandamanur substation and Suzlon WEGs are connected to Udhayathoor substation of TNEB.

The detailed locations of the WEGs alongwith the GPS Coordinates are as follows:

Make	Location No.	Survey Nos. (SF Nos.)	Village	Taluk	District	Latitude	Longitude
Vestas	234	SF No. 234/1(P), 234/6(P)	Poomalaikundu	Theni	Theni	N9 ⁰ 53' 19.2''	E77 ⁰ 26' 23.4''
Vestas	637	SF No. 637/5A(P), 648/2(P), 648/4	Poomalaikundu	Theni	Theni	N9 ⁰ 53' 39.0	E77 ⁰ 26' 59.1''
Vestas	122	SF No. 122/1B(P), 122/1C(P), 122/1D, 123/1(P)	Vallalnathi	Andipatti	Theni	N9 ⁰ 56' 07.5''	E77 ⁰ 32' 24.3''
Vestas	147	SF No.147/2A(P), 147/3A, 147/3B, 148/2(P)	G.Usilampatti	Andipatti	Theni	N9 ⁰ 56' 01.0''	E77 ⁰ 32' 58.8''
Suzlon	R-142	540/1(P),540/2(P), 540/3(P),541/1, 541/2(P),542/2B(P)	Udhayathoor	Radhapuram	Tirunelveli	N08 ⁰ 15' 21.3''	E77 ⁰ 45' 10.5''
Suzlon	R-300	300/4A(P),300/4B, 300/4C(P),300/4D(P),300/4E,300/4F, 300/4G,300/4H, 300/4I,300/4J, 300/4K,300/4L,	Thiruvambalapuram	Radhapuram	Tirunelveli	N08 ⁰ 15' 01.4''	E77 ⁰ 43' 31.0''

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Make	Location No.	Survey Nos. (SF Nos.)	Village	Taluk	District	Latitude	Longitude
		300/4M(P), 300/4N(P),300/4S (P), 300/4T(P)					
Suzlon	R-432	203/1(P)	Kasthuriengapuram	Radhapuram	Tirunelveli	N08 ⁰ 16' 59.1''	E77 ⁰ 46' 42.6''
Suzlon	R-435	433/2A(P),433/2B, 433/2C,433/2D, 433/2E(P),433/2H(P), 433/2I,433/2J, 433/2K(P)	Udhayathoor	Radhapuram	Tirunelveli	N08 ⁰ 14' 23.6''	E77 ⁰ 44' 25.7''
Suzlon	R-436	492/1B(P)	Udhayathoor	Radhapuram	Tirunelveli	N08 ⁰ 15' 0.8''	E77 ⁰ 44' 13.1''

Current Status of the Project

There are five 1.5 MW Suzlon WEGs and four 1.65 MW Vestas WEGs currently operational in the project activity. The first WEG commissioned was 1.5 MW Suzlon WEG on 20th September 2008 and commissioning of all the Suzlon and Vestas WEGs was completed on 30th September 2008. The detail commissioning schedule is as follows:

S.No	Make	Location No.	WEG-HTSC No.	Commissioned on
1	Suzlon -S82 1500 KW	R-432	2666	20/09/08
2	Suzlon -S82 1500 KW	R-436	2665	20/09/08
3	Suzlon -S82 1500 KW	R-435	2672	24/09/08
4	Suzlon -S82 1500 KW	R-300	2682	26/09/08

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S.No	Make	Location No.	WEG-HTSC No.	Commissioned on
5	Suzlon -S82 1500 KW	R-142	2687	27/09/08
6	Vestas - V82 1650 KW	122	T04	23/09/08
7	Vestas - V82 1650 KW	147	T05	23/09/08
8	Vestas - V82 1650 KW	234	T06	30/09/08
9	Vestas - V82 1650 KW	637	T07	30/09/08

The project activity has been implemented as per the description in the registered CDM PDD.

Specific clauses as per Voluntary Carbon Standard, 2007.1 –

1.12 Demonstration to confirm that the project was not implemented to create GHG emissions primarily for the purpose of its subsequent removal or destruction.

The project has been taken up by the project proponent to generate safe and environmentally benign power by utilizing wind energy, which is a renewable resource available and use it to meet the power requirement of its packaging and printing facility located at Tiruvottiyur in Chennai, Tamilnadu in India. Thus the project does not contribute in any way to GHG emission. Hence, the project was not implemented to create GHG emissions primarily for the purpose of its subsequent removal or destruction.

1.13 Demonstration that the project has not created another form of environmental credit (for example renewable energy certificates).

The project has been purely taken up as VCS project and has not been applied for any form of environmental credit. The project got registered on 14th March, 2010 with a Reference Number 3035 under UNFCCC. An undertaking from the project proponent has been enclosed with this PD. If the project has created another form of environmental credit, the proponent must provide a letter from the program operator that the credit has not been used and has been cancelled from the relevant program.

1.14 Project rejected under other GHG programs (if applicable):

The project has been registered with UNFCCC having Project Reference Number # 3035. The project has neither been applied under any other mechanism, nor has been rejected by any mechanism.

8.1 Proof of Title:

Provide evidence of proof of title through one of the following:

- *a legislative right;*
- *a right under local common law;*
- *Ownership of the plant, equipment and/or process generating the reductions/removals;*
- *A contractual arrangement with the owner of the plant, equipment or process that grants all reductions/removals to the proponent*

As evidence to Proof of Title for the emission reduction achieved by the project, ITC as project proponent would like to present

- sale deed of the land on which the WTGs has been installed and
- the ownership of the WTGs (purchase order, and payment of invoices and inclusion of assets into the books of ITC).

8.2 Projects that reduce GHG emissions from activities that participate in an emissions trading program (if applicable):

Project proponents of projects that reduce GHG emissions from activities that:

- *are included in an emissions trading Program; or*
- *take place in a jurisdiction or sector in which binding limits are established on GHG emissions;*

shall provide evidence that the reductions or removals generated by the project have or will not be used in the Program or jurisdiction for the purpose of demonstrating compliance. The evidence could include:

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- *a letter from the Program operator or designated national authority that emissions allowances (or other GHG credits used in the Program) equivalent to the reductions/removals generated by the project have been cancelled from the Program; or national cap as applicable or;*
- *purchase and cancellation of GHG allowances equivalent to the reductions/removals generated by the project related to the Program or national cap.*

The WTGs included in the project are located at Tamil Nadu in India, and India as a non Annex 1 country to Kyoto Protocol is not bounded by the protocol or neither have any national cap or trading scheme wherein renewable project like this can participate in trading of emission certificate.

Monitoring Methodology and Plan

Reporting Period

This is the first monitoring report for the project activity. The monitoring period is from 20th September 2008 to 13th March 2010 (both days including).

Monitoring Methodology

The project qualifies under small scale project category. The following Monitoring Methodology is applied for this project:

Renewable Energy Projects – Type-I.D: Grid connected renewable electricity generation, Version-13.

Monitoring Parameters:

Parameters monitored for project emission calculations:

Parameter:	EGy																													
Unit:	MWh (Mega-watt hour)																													
Description:	Net electricity supplied to the grid by the Project																													
Source:	Electricity supplied to the grid as per the joint meter readings																													
Value	<table border="1"> <thead> <tr> <th>Period</th> <th>Gross Export from all the WEGs (KWh)</th> <th>Total Import from all the WEGs (KWh)</th> <th>Net Export from all the WEGs in KWH</th> <th>Net Export from all the WEGs in MWH</th> </tr> </thead> <tbody> <tr> <td>Sep-Oct'08</td> <td>685632</td> <td>15192</td> <td>670440</td> <td></td> </tr> <tr> <td>Oct-Nov'08</td> <td>797544</td> <td>27384</td> <td>770160</td> <td></td> </tr> <tr> <td>Nov-Dec'08</td> <td>1523928</td> <td>22824</td> <td>1501104</td> <td></td> </tr> <tr> <td>Sep '08-Dec '08</td> <td>3007104</td> <td>65400</td> <td>2941704</td> <td>2941.70</td> </tr> </tbody> </table>					Period	Gross Export from all the WEGs (KWh)	Total Import from all the WEGs (KWh)	Net Export from all the WEGs in KWH	Net Export from all the WEGs in MWH	Sep-Oct'08	685632	15192	670440		Oct-Nov'08	797544	27384	770160		Nov-Dec'08	1523928	22824	1501104		Sep '08-Dec '08	3007104	65400	2941704	2941.70
Period	Gross Export from all the WEGs (KWh)	Total Import from all the WEGs (KWh)	Net Export from all the WEGs in KWH	Net Export from all the WEGs in MWH																										
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Period	Gross Export from all the WEGs (KWh)	Total Import from all the WEGs (KWh)	Net Export from all the WEGs in KWH	Net Export from all the WEGs in MWH
Dec '08-Jan'09	2576184	16968	2559216	
Jan'09-Feb'09	2080368	20160	2060208	
Feb'09-Mar'09	888096	27792	860304	
Mar-Apr'09	541464	38184	503280	
Apr-May'09	2450568	18696	2431872	
May-June'09	6206160	5208	6200952	
Jun-Jul'09	7074936	2424	7072512	
Jul-Aug'09	6606888	8784	6598104	
Aug-Sept'09	5396583	9060	5387523	
Sep-Oct'09	4681220	11343	4669878	
Oct-Nov'09	1124491	34577	1089914	
Nov-Dec'09	1220952	27530	1193423	
Dec '08-Dec '09	40847911	220726	40627185	40627.19

Period	Gross Export from all the WEGs (KWh)	Total Import from all the WEGs (KWh)	Net Export from all the WEGs in KWH	Net Export from all the WEGs in MWH
Dec'09-Jan'10	2070015	20961	2049054	
Jan'10-Feb'10	2173344	21432	2151912	
Feb'10-Mar'10	832695	26899	805795 *	

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	Dec '09- March '10	5076054	69292	5006762	5006.76
	Period		Generation (MWh)		
	September 2008 - December 2008		2,941.70		
	December 2008- December 2009		40,627.19		
	December 2009- March 2010		5006.76		
Accuracy:	Accuracy class 0.5				
Calibration Frequency:	Yearly				
Description of measurement methods:	Net electricity supplied to grid is measured by main meters (export and import) at the Metering Point. The monitored data is maintained in hard copies (photo copies of generation report), issued by TNEB every month showing export and import of energy. The copies of such TNEB generation report are primary document relating to actual number of units fed to the grid. Additionally, the daily generation report (which contains data on grid availability, machine availability and generation of electricity) is available to ITC send by Suzlon and Vestas which are then compiled into monthly reports and saved electronically.				

*To derive at the conservative net export figure for the period of February 2010 to March 2010 (i.e. from 15th February, 2010 to 13th March 2010 for Suzlon WEGs and from 10th February, 2010 to 13th March, 2010 for Vestas WEGs) two approaches (Option 1 and Option 2) were adopted.

To get the net export figures for Suzlon for February-March, 2010 (i.e. from 15th February, 2010 to 13th March 2010), the total month's figures have been apportioned by subtracting the net export figures for 14th and 15th March, 2010 from the total net export of that period. The calculated figures are found conservative. However, another method of calculation (**Option 2**) has been adopted to get the net export for February 15, 2010 to March 13, 2010 from the actual data as per the daily generation reports. But the figures achieved were greater than those calculated in the earlier method (**Option 1**) mentioned. Therefore, the net export figures derived in the earlier calculation method i.e. in **Option 1** have been considered for final VER calculations as conservative figures. For Vestas also the same approach has been taken. The only exception is while data apportioning instead of deducting, the 11th, 12th & 13th March, 2010 net export figures have been added to the net export of total month (i.e. February 10, 2010 to March 10, 2010), since the meter reading date for Vestas is 10th of every month which is 15th for Suzlon.

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The calculations are given in the "Calculation_conservative" excel sheet of the VER WORKINGS workbook.

The workings are as follows:

Option 1:

Table Showing Generation, Import & Net Export for Suzlon WEGs in KWh																
Period : 15 Feb 2010 - 13 Mar 2010																
In units																
WEG	Suzlon 142			Suzlon 300			Suzlon 432			Suzlon 435			Suzlon 436			Total Net generation
Ht Sc No	2687			2682			2666			2672			2665			
Particulars	Export	Import	Net	Export	Import	Net	Export	Import	Net	Export	Import	Net	Export	Import	Net	
Total (15th Feb to 15th March)	136008	1992	134016	135696	1512	134184	111384	2232	109152	122688	2232	120456	110352	2472	107880	605688
Total (15th Feb to 13th March)	126293	1850	124443.4	126003	1404	124599	103428	2072.6	101355	113925	2072.6	111852	102470	2295.43	100174	562424.6

Table Showing Generation, Import & Net Export for Vestas WEGs in KWh													
Period : 10 FEB 2010 - 13 MAR 2010													
In units													
WEG	Vestas 122			Vestas 147			Vestas 234			Vestas 637			Total Net generation
HT Sc No	T 04			T 05			T 06			T 07			
Slot/Particulars	Export	Import	Net	Export	Import	Net	Export	Import	Net	Export	Import	Net	
Total (for 10th Feb to 10th March)	72192	3864	68328	83472	3528	79944	33768	4104	29664	34512	4248	30264	208200
Total For 11th March-13th March	9966.2	357.7	9608.516	11162	351	10811.6	7776	376.26	7399.7	7727.2	376.26	7351	
TOTAL (for 10th Feb to 13th March)	82158	4222	77936.52	94634	3879	90755.6	41544	4480.3	37064	42239	4624.3	37615	243371

Option 2:

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0.016944531 Import to Gross generation ratio for the month of Feb 15 to March 15, 2010.

	Actual generation (KWh)	Calculated Import (KWh)	Calculated Net export (KWh)	Date
Suzlon 435	4,844	82.0793082	4,762	14 th March
	1,688	28.60236834	1,659	15 th March
Suzlon 436	4,056	68.72701776	3,987	14 th March
	1,676	28.39903397	1,648	15 th March
Suzlon 432	2,952	50.02025553	2,902	14 th March
	1,447	24.51873637	1,422	15 th March
Suzlon 300	4,521	76.60622468	4,444	14 th March
	2,272	38.49797445	2,234	15 th March
Suzlon 142	4,301	72.87842786	4,228	14 th March
	1,761	29.8393191	1,731	15 th March

Table Showing Generation, Import & Net Export for Suzlon WEGs in KWh																
Period : 15 Feb 2010 - 13 Mar 2010																
																<i>In units</i>
WEG	Suzlon 142			Suzlon 300			Suzlon 432			Suzlon 435			Suzlon 436			Total Net generation
Ht Sc No	2687			2682			2666			2672			2665			
Slot/Particulars	Export	Import	Net	Export	Import	Net	Export	Import	Net	Export	Import	Net	Export	Import	Net	
Total (15th Feb to 15th March)	136008	1992	134016	135696	1512	134184	111384	2232	109152	122688	2232	120456	110352	2472	107880	605688
Net Export figures (15th Feb to 13th March)			128,057			127,506			104,828			114,035			102,245	

Legend

Adjusted net export figures for Suzlon for February-March, 2010 (upto March 13th) from daily generation report *


* The newly calculated figures are greater than the one were calculated in the earlier method (option 1). So, the net export derived by option 1 calculations can be considered as conservative.

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Table Showing Generation, Import & Net Export for Vestas WEGs in KWh													
Period : 10 FEB 2010 - 13 MAR 2010													
<i>In units</i>													
WEG	Vestas 122			Vestas 147			Vestas 234			Vestas 637			Total Net generation
HT Sc No	T 04			T 05			T 06			T 07			
Slot/Particulars	Export	Import	Net	Export	Import	Net	Export	Import	Net	Export	Import	Net	
Total (for 10th Feb to 10th March)	72192	3864	68328	83472	3528	79944	33768	4104	29664	34512	4248	30264	208200

Actual daily generation figures	11th March, '10	8904	72	8832	9816	48	9768	4368	96	4272	6384	120	6264	
	12th March, '10	2928	96	2832	3096	96	3000	2304	144	2160	2328	144	2184	
	13th March, '10	1944	144	1800	2376	120	2256	480	144	336	696	120	576	
	Total (11th March-13th March)	13776	312	13464	15288	264	15024	7152	384	6768	9408	384	9024	
Net export figures (for 10th Feb to 13th March)			81792			94968			36432			39288		

Legend

 Net export Figures for Vestas for 10th February, 2010 to 13th March ,2010) from daily generation report**

**These figures are greater than the one were calculated in the earlier method as option 1. So, the net export derived by option 1 calculations can be considered as conservative.

Quality assurance procedure

The project has adhered to all the mandatory regulatory and statutory requirements at the state as well as at national level during the monitoring period of concern. The accuracy of monitoring parameter is ensured by adhering to the calibration and testing procedure as set in the power purchase agreement.

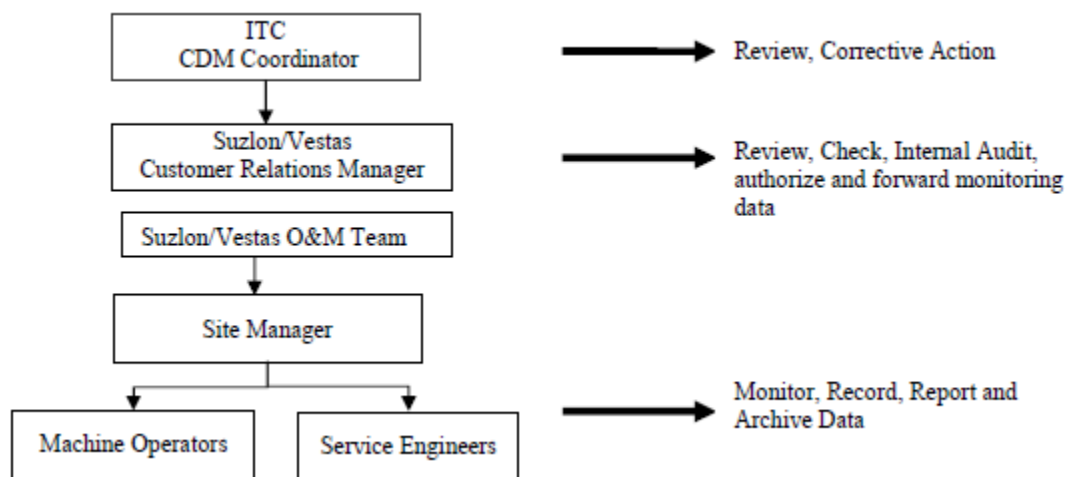
All Joint Meter Readings (JMR) for the month are taken periodically by authorised TNEB officers in presence of representative from Vestas/Suzlon and issued to ITC as a monthly

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report having mentioned total export, total import and net export. This can also be cross-checked with invoices raised by ITC on TNEB at the end of the year along with reconciliation statement attached.

The daily generation reports are also available with ITC. The daily generation report contains data on grid availability, machine availability and generation of electricity. ITC reviews the machine availability from the generation report and initiates the forward corrective action request to Suzlon and Vestas in case the performance is not as per agreed O&M terms. The daily generation reports can also be collated to cross verify the monthly generation reported in this monitoring report.

There is a structured operational and management structure implemented by ITC along with Suzlon and Vestas as follows:



All energy meters are calibrated annually as per the schedule prescribed by TNEB.

Table 01 contains details of calibration of the instruments.

Table 01: Periodic Calibration Details:

Parameter	Type of Instrument	Meter Make	WEG-HTSC No.	Frequency of Calibration	Calibrating Agency	Date of Calibration Certificate	Main Meter fixed on
Net electricity supplied to the grid by the Project	Energy Meter	Elster	2666	Yearly	TNEB	25/08/09	20/09/08
Net electricity	Energy	Elster	2665	Yearly	TNEB	25/08/09	20/09/08

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Parameter	Type of Instrument	Meter Make	WEG-HTSC No.	Frequency of Calibration	Calibrating Agency	Date of Calibration Certificate	Main Meter fixed on
supplied to the grid by the Project	Meter						
Net electricity supplied to the grid by the Project	Energy Meter	Elster	2672	Yearly	TNEB	25/08/09	24/09/08
Net electricity supplied to the grid by the Project	Energy Meter	Elster	2682	Yearly	TNEB	25/08/09	26/09/08
Net electricity supplied to the grid by the Project	Energy Meter	Elster	2687	Yearly	TNEB	25/08/09	27/09/08
Net electricity supplied to the grid by the Project	Energy Meter	Elster	T 04	Yearly	TNEB	22/08/08, & 19/12/09	22/08/08
Net electricity supplied to the grid by the Project	Energy Meter	Elster	T 05	Yearly	TNEB	22/08/08, & 19/12/09	22/08/08
Net electricity supplied to the grid by the Project	Energy Meter	Elster	T 06	Yearly	TNEB	22/08/08, & 19/12/09	22/08/08
Net electricity supplied to the grid by the Project	Energy Meter	Elster	T 07	Yearly	TNEB	22/08/08, & 19/12/09	22/08/08

Since the calibration of the energy meters having reference number T04, T05, T06, and T07, has been delayed for 5 months (was due on 21/08/09, however calibration was conducted on 19/12/09); therefore the meter reading for total export and import for the period of 5 months (i.e. August 2009 to December 2009) has been adjusted as follows: -

Export figures – from JMR is multiplied with “1-0.005” and
 Import figures – from JMR is multiplied with “1+0.005” and
 Net export is derived as ‘adjusted export’ – ‘adjusted import’.

Emission Reductions

Formulas Applied

For Baseline Emissions:

According to the methodology the baseline emissions are the product of electrical energy baseline expressed in kWh of electricity produced by the renewable generating unit multiplied by an emission factor.

$$BE_y = EG_y * EF_y$$

Where:

EG_y = the electricity supplied to the grid,
 EF_y = CO2 emission factor of the grid

The emission factor of the grid had been calculated once during the CDM PDD preparation using a combine margin approach. The combined margin emission coefficient for the southern regional grid of India is 0.927 kg CO₂e/kWh, was sourced from Central Electricity Authority (CEA) data. The Central Electricity Authority, Government of India has published a database of all the operating power stations in the country. The operating margin (OM) was calculated ex ante using the simple OM approach based on the generation-weighted average emissions per electricity unit of all fossil-fuelled generating sources serving the system over a three year period of 2005-06, 2006-07, 2007-08. The build margin (BM) was calculated ex ante based on 20% most recent capacity additions in the grid. BM is calculated ex ante based on the recent information available at the time of submission of PDD which is for the year 2007-08 as published in the CEA website. The operating margin has been determined to be 0.998 kg CO₂e/kWh and the build margin to be 0.713 kg CO₂e/kWh.

Project Emissions:

Since in the project activity, a renewable power source like wind is used to generate electricity, the project emission has been considered as zero.

$$PE_y = 0$$

Leakage:

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Since no equipment is transferred from another project activity or that any existing equipment is transferred to another activity, leakage as per AMS ID is taken as zero.

$$L_y = 0$$

Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - L_y \quad (7)$$

Where,

ER_y = Emission reductions in year y (t CO₂e)

BE_y = Baseline emissions in year y (t CO₂e)

PE_y = Project emissions in year y (t CO₂)

L_y = Leakage emissions in year y (t CO₂)

Year wise Emission Reductions achieved

Year 2008:

	Value	Unit	Source
EG _y	2,941.70	MWh	Based on plant records
EF _y	0.927	tCO ₂ /MWh	Fixed ex-ante as per the registered CDM PDD
Project Emissions	0	tCO ₂	As per registered CDM PDD
Leakage Emission	0	tCO ₂	As per registered CDM PDD
Baseline Emissions	2727	tCO ₂	Calculated (Round figure)
Net emission reductions	2727	tCO ₂	Calculated

Year 2009:

	Value	Unit	Source
EG _y	40627.19	MWh	Based on plant records
EF _y	0.927	tCO ₂ /MWh	Fixed ex-ante as per the registered CDM PDD
Project Emissions	0	tCO ₂	As per registered CDM PDD
Leakage Emission	0	tCO ₂	As per registered CDM PDD
Baseline Emissions	37668	tCO ₂	Calculated (Round figure)
Net emission reductions	37668	tCO ₂	Calculated

Year 2010:

	Value	Unit	Source
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14.1 MW grid connected wind energy project in Tamilnadu by ITC Limited

EG _y	5,006.76	MWh	Based on plant records
EF _y	0.927	tCO ₂ /MWh	Fixed ex-ante as per the registered CDM PDD
Project Emissions	0	tCO ₂	As per registered CDM PDD
Leakage Emissions	0	tCO ₂	As per registered CDM PDD
Baseline Emissions	4642	tCO ₂	Calculated (Round figure)
Net emission reductions	4642	tCO ₂	Calculated

Summary of Emission Reductions achieved

Year	Baseline Emissions	Project Emissions	Leakage	Net Emission Reductions
2008	2727	0	0	2727
2009	37668	0	0	37668
2010	4642			4642
TOTAL	45037	0	0	45037

Comparison between the ER estimates provided in the registered CDM PD D and the actual VERs claimed:

Average ER estimated as per the registered CDM PDD	52934.76 tCO _{2e} in 534 days
Actual VERs claimed (20 th September 2008 to 13 th March 2010)	45037 tCO _{2e}
Deviation	-14.31%