



Monitoring report form (Version 03.2)

Monitoring report

Title of the project activity	Grid Connected Wind Energy Generation at Andhra Pradesh.
Reference number of the project activity	5921
Version number of the monitoring report	01
Completion date of the monitoring report	24/01/2014
Registration date of the project activity	29/03/2012
Monitoring period number and duration of this monitoring period	02 and 01/01/2013 to 31/12/2013
Project participant(s)	Vish Wind Infrastructure LLP (Private entity)
Host Party(ies)	India
Sectoral scope(s) and applied methodology(ies)	Sectoral Scope - 1 [Energy industries (renewable/ non-renewable sources)] and Approved consolidated baseline methodology ACM0002 (Version 12.2.0, Annex 16, EB 65)
Estimated amount of GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period in the registered PDD	36,738 tCO ₂
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period	40,401 tCO ₂
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period up to 31 December 2012(if applicable)	Not applicable
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period from 1 January 2013 onwards (if applicable).	40,401 tCO ₂

SECTION A. Description of project activity**A.1. Purpose and general description of project activity**

>>

The purpose of the project activity is to utilize wind energy potential for generation of electricity. The project activity replaces anthropogenic emissions of greenhouse gases (GHG's) into the atmosphere, which is estimated to be approximately 36,738 tCO₂e per year, by displacing an equivalent amount of electricity generation through the operation of existing fuel mix in the grid comprising mainly fossil fuel based power plants and future capacity expansions connected to the grid.

Vish Wind Infrastructure LLP (hereafter referred as "VWILLP") is installing 20.8 MW wind energy power plant in the state of Andhra Pradesh in India. The project activity involves supply, erection, commissioning and operation of 26 machines with rated capacity of 800 KW each. All the machines are Enercon E-53 make.

The first machine under the project activity was commissioned on 30/09/2011 and the last machine under the project activity was commissioned on 15/07/2012. The expected operational lifetime of the project is for 20 years. The total emission reductions achieved under this monitoring period (01/01/2013 to 31/12/2013) is 40,401 tCO₂.

A.2. Location of project activity

>>

Country: India**Region:** Southern**State:** Andhra Pradesh**Districts:** Anantapur & Kurnool**Villages:** Nallakonda & Thummalapenta

Nearest railway station is at Anantapur which is about 70 km away from the site. Nearest airport is at Bangalore which is about 200 km from the site.

The details of the geo-coordinates of individual machines have been given below:

1) Location details for Anantapur Site, Village – Nallakonda

Sl. no.	Commissioning date	Location no.	Latitude	Longitude
1.	15/07/2012	1	14° 03' 51.2"	77° 32' 06.9"
2.	15/07/2012	2	14° 03' 55.8"	77° 32' 03.4"
3.	15/07/2012	3	14° 03' 49.4"	77° 32' 29.6"
4.	15/07/2012	4	14° 03' 59.9"	77° 32' 26.1"
5.	15/07/2012	5	14° 04' 22.9"	77° 32' 22.1"
6.	15/07/2012	6	14° 04' 27.5"	77° 32' 17.4"
7.	15/07/2012	7	14° 04' 34.0"	77° 32' 12.3"
8.	15/07/2012	8	14° 04' 33.5"	77° 32' 00.5"
9.	15/07/2012	9	14° 04' 40.7"	77° 32' 15.2"
10.	15/07/2012	10	14° 04' 45.4"	77° 32' 12.6"
11.	15/07/2012	11	14° 04' 50.0"	77° 32' 10.5"
12.	15/07/2012	12	14° 04' 41.1"	77° 31' 44.2"
13.	15/07/2012	13	14° 04' 47.4"	77° 31' 44.5"
14.	15/07/2012	14	14° 04' 51.5"	77° 31' 44.0"
15.	15/07/2012	15	14° 04' 56.5"	77° 31' 41.9"
16.	15/07/2012	16	14° 05' 01.1"	77° 31' 40.8"
17.	09/07/2012	39	14° 08' 41.1"	77° 35' 29.0"
18.	09/07/2012	41	14° 08' 50.3"	77° 35' 01.0"
19.	09/07/2012	42	14° 08' 57.2"	77° 34' 53.4"
20.	09/07/2012	43	14° 09' 01.2"	77° 34' 50.5"

21.	09/07/2012	44	14 ⁰ 09' 43.5"	77 ⁰ 36' 02.6"
22.	09/07/2012	45	14 ⁰ 09' 51.4"	77 ⁰ 35' 57.9"
23.	09/07/2012	46	14 ⁰ 09' 57.4"	77 ⁰ 35' 50.2"
24.	09/07/2012	47	14 ⁰ 10' 00.8"	77 ⁰ 35' 48.5"

2) Location details for Kurnool Site, Village - Thummalapenta

Sl. no.	Commissioning date	Location no.	Latitude	Longitude
1.	30/09/2011	91	15 ⁰ 02' 40.3"	78 ⁰ 02' 54.0"
2.	30/09/2011	93	14 ⁰ 03' 59.2"	78 ⁰ 03' 04.9"

A.3. Parties and project participant(s)

Party involved (host) indicates a host Party)	Private and/or public entity(ies) project participants (as applicable)	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
India (host)	Vish Wind Infrastructure LLP (Private entity)	No

A.4. Reference of applied methodology

>>

Title: "Consolidated baseline methodology for grid-connected electricity generation from renewable sources"

Reference: Approved consolidated baseline methodology ACM0002 (Version 12.2.0, Annex 16, EB 65)

ACM0002 draws upon the following tools which have been used in the PDD:

- Tool to Calculate the Emission Factor for an Electricity System – Version 02.2.1, Annex 19, EB 63
- Tool for the Demonstration and Assessment of Additionality – Version 06.0.0, Annex 21, EB 65

Further information with regards to the methodology / tools can be obtained at

<http://cdm.unfccc.int/methodologies/DB/UB3431UT9I5KN2MUL2FGZXZ6CV71LT>

A.5. Crediting period of project activity

>>

The length of the Crediting period of the project activity as per registered PDD is 10 years (Fixed). The crediting period start date is 01/04/2012 and length of crediting period is 10 years (from 01/04/2012 to 31/03/2022).

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

>>

The first machine under the project activity was commissioned on 30/09/2011 and last machine under the project activity was commissioned on 15/07/2012. The project activity consists of 26 machines (800 kW each) of Enercon make E-53, with a total capacity of 20.8 MW. The commissioning date for all the machines included in the project activity is given in the section A.2.

Enercon operation and maintenance activities are ISO 9001:2008 certified¹ and all the events are performed in line the ISO requirement. Referring to the data available, it can be inferred that there have not been any major special event for any machines that are included in the project activity. As a part of regular maintenance, the machines are stopped for mechanical and electrical maintenance for 16 to 18 hours annually and for visual inspection for 6 to 7 hours quarterly, which is 6 hours for mechanical and electrical maintenance and 3 hours for visual inspection for the current monitoring period.

B.2. Post registration changes**B.2.1. Temporary deviations from registered monitoring plan or applied methodology**

>>

Not applicable

B.2.2. Corrections

>>

Not applicable

B.2.3. Permanent changes from registered monitoring plan or applied methodology

>>

The monitoring plan has been revised and the calibration frequency has been changed to once in five years during the previous monitoring period. This is in line with para 5 (a) of the Appendix 1 of the CDM project standard and is beyond the control of the PP and does not have any impact on the emission reduction calculation. Hence, does not require any prior approval. The first issuance has taken place successfully.

B.2.4. Changes to project design of registered project activity

>>

Not applicable

B.2.5. Changes to start date of crediting period

>>

Not applicable

B.2.6. Types of changes specific to afforestation or reforestation project activity

>>

Not applicable

¹ The copy of the ISO certificate has been provided to the DOE.

SECTION C. Description of monitoring system

>>

Approved monitoring methodology ACM0002 (Version 12.2.0), Sectoral Scope: 1, “Consolidated monitoring methodology for zero-emissions grid-connected electricity generation from renewable sources”, is proposed to be used to monitor the emission reductions.

This approved monitoring methodology requires monitoring of the following:

- Electricity generation from the project activity; and
- Operating margin emission factor and build margin emission factor of the grid, where *ex-post* determination of grid emission factor has been chosen

Since the baseline methodology is based on *ex-ante* determination of the baseline, the monitoring of operating margin emission factor and build margin emission factor is not required.

Monitoring at Kurnool site:

The metering system for the project activity consists of cluster metering points at 33 kV at project site. Each cluster metering point has one main and one check meter (33 kV metering point). All the WEGs of project activity will exclusively connected to individual cluster metering points i.e. there will be no WEGs of other project owners that are connected to these cluster metering points. In a particular wind-farm of Enercon, each cluster has WEGs of only one project owner.

In addition to the cluster metering point, there is one set of main & check meter (bulk/billing metering point) at 132 kV Ankireddy palli sub station, where all the WEGs of the project activity and non-project activity are connected.

Monitoring at Anantapur site:

The metering system for the project activity consists of cluster metering points at 33 kV at project site. Each cluster metering point has one main and one check meter (33 kV metering point). All the WEGs of project activity will exclusively connected to individual cluster metering points i.e. there will be no WEGs of other project owners that are connected to these cluster metering points. In a particular wind-farm of Enercon, each cluster has WEGs of only one project owner.

In addition to the cluster metering point, there is one set of main & check meter (bulk/billing metering point) at 220 kV Shapuram Sub-station, where all the WEGs of the project activity and non-project activity are connected.

Calculation of Net Electricity Supplied to the grid by project activity

Since the main and check meters (bulk meter) at 132 kV (for Kurnool) or 220 kV (for Anantpur) metering point is connected to the machines of the project activity and the machines commissioned by the other project developers, therefore in order to determine the net electricity supplied to the grid at 132 kV (for Kurnool) or 220 kV (for Anantpur), the state utility apply Line loss to the meter reading recorded at the 33 kV.

The summation of net electricity supplied to the grid from the two sites (Kurnool & Anantpur) under the project activity shall comprise the “Net Electricity Supplied to the Grid by the Project Activity (EG_{PJ,Y})”.

The total % of Line loss from WEGs (33 kV metering point) to 132 kV (for Kurnool) or 220 kV (for Anantpur) metering point is calculated by the state utility. Net Electricity supplied to the grid by project activity is calculated by applying Line loss to the meter readings taken at 33 kV metering point of the project activity.

The procedure for calculation of the percentage Line loss has been shown below:

$$T_E = \frac{(X_1+X_2+X_3+X_4+.....X_n) - Y}{(X_1+X_2+X_3+X_4+.....X_n)} \times 100\%$$

Where,

TE = Percentage Line loss incurred in Line between the meters located at 33 kV metering point and the meters located at 132 kV (for Kurnool) or 220 kV (for Anantpur) metering point (bulk meter: main and check) at high voltage side of receiving sub-station.

$(X1+X2+X3+X4+.....Xn)$ = Summation of meter readings (Export) at 33 kV metering points for all the project developers connected to receiving substation (including the machines of the project activity and other project developers)

Y = Export Reading at bulk meter installed at high voltage side of transformer of the receiving substation at 132 kV (for Kurnool) or 220 kV (for Anantpur) metering point, connecting machines of the project activity and other project developers.

Monthly JMR recorded at 33 kV metering points as given by APCPDCL contains the following data:-

1. Electricity Export ($EG_{JMR, Export, y}$) : Electricity export to the grid at 33kV metering point.
2. Electricity Import ($EG_{JMR, Import, y}$) : Electricity import from grid at 33kV metering point.

Net Electricity supplied to the Grid is calculated as:-

$$EG_{PJ, y} = EG_{Export, y} - EG_{Import, y}$$

Where,

$$EG_{Export, y} = EG_{JMR, Export, y} \times (1 - TE) \dots\dots\dots(1)$$

$$EG_{Import, y} = EG_{JMR, Import, y} \times (1 + TE) \dots\dots\dots(2)$$

The metering diagrams for both the sites (Kurnool & Anantpur) have been shown in Appendix I.

Metering Equipment:

- All main and check meters are two-way tri-vector meters capable of recording import and export of electricity and under the control of state electricity utility.
- All main and check meters are of 0.2s of accuracy class.

The details of the meters have been given below:

Name of the Owner	Meter type	Meter no.	Make	Accuracy class	Calibration prior to the monitoring period	Calibration due on
Vish Wind Phase 1	Main meter	12092978	L & T	0.2s	06/08/2012	05/08/2017
	Check meter	12092998	L & T	0.2s	08/08/2012	07/08/2017
Vish Wind Phase 2	Main meter	12092976	L & T	0.2s	08/08/2012	07/08/2017
	Check meter	12092979	L & T	0.2s	08/08/2012	07/08/2017
Vish Wind Phase 4	Main meter	AP902988	Secure	0.2s	05/07/2011	04/07/2016
	Check meter	AP902990	Secure	0.2s	05/07/2011	04/07/2016

SI No.	Substation name	Make	Accuracy class	Main meter	Check meter	Calibration prior to the monitoring period	Calibration due on
1.	220/33 kV Shapuram substation	L & T	0.2s	12093025	12093032	07/08/2012	06/08/2017
2.	132/33 kV Ankireddipalli substation	L & T	0.2s	11070264	11070337	27/12/2011	26/12/2016

From the above tables, it can be seen that there is no delay in the calibration.

Meter Readings:

The meter readings are noted in the form of joint meter report and are signed jointly by the representatives of Enercon and the state utility. Enercon provides the report to the Project proponent and the project proponent maintains the report afterwards.

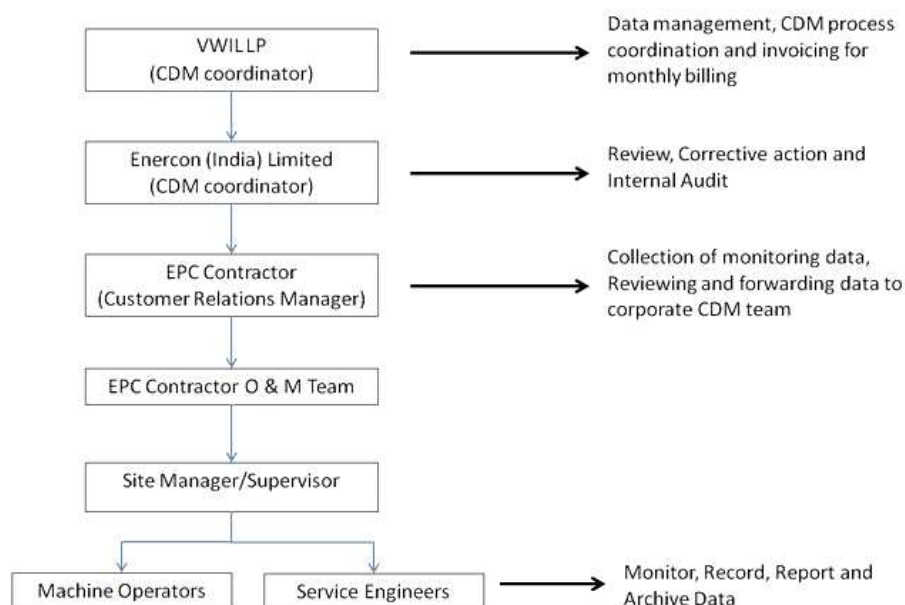
In case the main meter(s) is found to be operating outside the permissible limits, the main meter will be either replaced or calibrated immediately. Whenever a main meter goes defective, the consumption recorded by the Check meter will be referred.

QA/QC process:

All the meters are calibrated/ tested once in five years. The calibration is done by the officials of the state utility. The copy of the calibration/testing certificate is kept as record by the PP.

The Project is operated and maintained by Enercon. Enercon is an ISO 9001:2008 certified Quality Management system from Germanischer Lloyd. Enercon follows the documentation practices to ensure the reliability and availability of the data for all the activities as required from the identification of the site, wind resource assessment, logistics, finance, construction, commissioning and operation of the wind power project.

The operational and management structure implemented for data monitoring is as follows:



Training and maintenance:

In order to ensure that Enercon's staffs who are positioned to take care all the activities starting from project construction to operation and maintenance, Enercon Training Academy provides need based periodical training to meet the requirements of the project. The training is contemporary, which results in imparting focused knowledge leading to value addition to the attitude and skills of all the trainees. The training facility is located at Daman and is fully functional and equipped with qualified trainers, training equipments, classrooms and hostel facilities.

SECTION D. Data and parameters

D.1. Data and parameters fixed ex ante or at renewal of crediting period

(Copy this table for each piece of data and parameter.)

Data / Parameter:	$EF_{grid, OM, y}$
Unit:	tCO ₂ e/MWh
Description:	Operating Margin Emission Factor of Southern Regional Electricity Grid
Source of data:	"CO ₂ Baseline Database for Indian Power Sector", version 6 published by the Central Electricity Authority, Ministry of Power, Government of India. The "CO ₂ Baseline Database for Indian Power Sector" is available at www.cea.nic.in
Value(s) applied:	0.9684
Purpose of data:	Baseline emission calculation
Additional comment:	The value is calculated on ex-ante basis and it will remain same throughout the crediting period.

Data / Parameter:	$EF_{grid, BM, y}$
Unit:	tCO ₂ e/MWh
Description:	Build Margin Emission Factor of Southern Regional Electricity Grid

Source of data:	"CO ₂ Baseline Database for Indian Power Sector" version 6 published by The Central Electricity Authority, Ministry of Power, Government of India. The "CO ₂ Baseline Database for Indian Power Sector" is available at www.cea.nic.in
Value(s) applied:	0.7634
Purpose of data:	Baseline emission calculation
Additional comment:	The value is calculated on ex-ante basis and it will remain same throughout the crediting period.

Data / Parameter:	$EF_{grid, CM, y}$
Unit:	tCO ₂ e/MWh
Description:	Combined Margin Emission Factor of Southern Regional Electricity Grid
Source of data:	The "CO ₂ Baseline Database for Indian Power Sector" version 6 published by the Central Electricity Authority, Ministry of Power, Government of India. The "CO ₂ Baseline Database for Indian Power Sector" is available at www.cea.nic.in
Value(s) applied:	In case of wind power projects default weights of 0.75 for $EF_{grid, OM}$ and 0.25 for $EF_{grid, BM}$ are applicable as per ACM0002, Version 12.2.0. Combined Margin Emission Factor (EF_y or $EF_{CM,y}$) = 0.9172
Purpose of data:	Baseline emission calculation
Additional comment:	The value is calculated on ex-ante basis and it will remain same throughout the crediting period.

D.2. Data and parameters monitored

(Copy this table for each piece of data and parameter.)

Data / Parameter:	$EG_{PJ,y}$
Unit:	MWh (Mega-watt hour)
Description:	Net electricity supplied to the grid by the project activity.
Measured/ Calculated / Default:	Calculated
Source of data:	Calculated
Value(s) of monitored parameter:	44,049
Monitoring equipment:	Not applicable
Measuring/ Reading/ Recording frequency:	Monthly basis

Calculation method (if applicable):	<ul style="list-style-type: none"> Metering system of the project activity consists of cluster metering points at 33 kV at project site (both at Kurnool & Anantpur). Each cluster metering point will have one main and one check meter (33 kV metering point). In addition to cluster metering point there is one set of main & check meter (bulk/billing metering point), where all the WEGs of project activity and non-project activity are connected and billing is done. All main and check meters are two-way electronic tri-vector meters and under the control of state electricity utility. All main and check meters are of 0.2s of accuracy class. The procedures for metering and meter reading will be as per the provisions of the power purchase agreement except or otherwise explicitly stated in the PDD. Monthly Joint Meter Reading will be recorded by the State utility in the presence of PP's representative (Enercon). Net electricity supplied to the grid value is used in calculation of emission reduction of the project activity. <p>The calculation procedure has been explained in details in section C.</p>
QA/QC procedures:	<p>All the main meter and check meters are calibrated by state utility once in five years.</p> <p>QA/QC procedures are as implemented by Discom/ State utility pursuant to the provisions of the power purchase agreement except or otherwise explicitly stated in the PDD.</p>
Purpose of data:	Baseline emission calculation
Additional comment:	The data will be archived both in electronic and hard paper format for crediting period + 2 years.
Data / Parameter:	EG_{JMR, Export,y}
Unit:	MWh (Mega-Watt hour)
Description:	Electricity export recorded at 33 kV (in the form of Joint meter reading report) cluster metering points connecting all WEGs of the project activity.
Measured/ Calculated / Default:	Measured
Source of data:	Electricity export to the grid as per the joint meter reading recorded at cluster metering point.
Value(s) of monitored parameter:	44,587
Monitoring equipment:	Two-way tri-vector meters of 0.2s of accuracy class ² .
Measuring/ Reading/ Recording frequency:	Monthly basis
Calculation method (if applicable):	Electricity export to the grid will be recorded by cluster meters (main and check) connecting all turbines at 33 kV level.

² Please refer to section C for details of the meters and calibration.

QA/QC procedures:	<p>This value can be crosschecked from transmission loss calculation sheet provided by the state utility.</p> <p>All the main meter and check meters are calibrated by state utility once in five years.</p> <p>QA/QC procedures are as implemented by Discom/ State utility pursuant to the provisions of the power purchase agreement except or otherwise explicitly stated in the PDD.</p>
Purpose of data:	Baseline emission calculation
Additional comment:	The data will be archived both in electronic and hard paper format for crediting period + 2 years.

Data / Parameter:	EG_{JMR, Import,y}
Unit:	MWh (Mega-Watt hour)
Description:	Electricity Import recorded at 33 kV (in the form of Joint meter reading report) cluster metering points connecting all WEGs of the project activity.
Measured/ Calculated / Default:	Measured
Source of data:	Electricity import from the grid as per the joint meter reading recorded at cluster metering point.
Value(s) of monitored parameter:	19.075
Monitoring equipment:	Two-way tri-vector meters of 0.2s of accuracy class ³ .
Measuring/ Reading/ Recording frequency:	Monthly basis
Calculation method (if applicable):	Electricity import from the grid will be recorded by cluster meters (main and check) connecting all turbines at 33 kV level.
QA/QC procedures:	<p>All the main meter and check meters are calibrated by state utility once in five years.</p> <p>QA/QC procedures are as implemented by Discom/ State utility pursuant to the provisions of the power purchase agreement except or otherwise explicitly stated in the PDD.</p>
Purpose of data:	Baseline emission calculation
Additional comment:	The data will be archived both in electronic and hard paper format for crediting period + 2 years.

Data / Parameter:	EG_{Export,y}
Unit:	MWh (Mega-Watt hour)

³ Please refer to section C for details of the meters and calibration.

Description:	Electricity exported by the project activity to the grid after apportioning of line losses between 33 kV metering point (Cluster meter) & Bulk metering point (132 kV metering point at Kurnool /220 kV metering point at Anantapur) at Enercon sub-station.
Measured/ Calculated / Default:	Calculated
Source of data:	Certified “transmission loss calculation sheet” given by state utility/APCPDCL (Andhra Pradesh Central Power Distribution Company Limited).
Value(s) of monitored parameter:	44,068
Monitoring equipment:	Two-way tri-vector meters of 0.2s of accuracy class ⁴ .
Measuring/ Reading/ Recording frequency:	Monthly basis
Calculation method (if applicable):	Value is calculated by State Utility independently. Enercon or PP does not have any role or control on calculation of net electricity generation/export. The calculation procedure has been explained in details in section C.
QA/QC procedures:	Value can be cross - checked from the invoices raised by PP to the DISCOM. All the main meter and check meters are calibrated by state utility once in five years. QA/QC procedures are as implemented by Discom/ State utility pursuant to the provisions of the power purchase agreement except or otherwise explicitly stated in the PDD.
Purpose of data:	Baseline emission calculation
Additional comment:	The data will be archived both in electronic and hard paper format for crediting period + 2 years.

Data / Parameter:	EG_{Import,y}
Unit:	MWh (Mega-Watt hour)
Description:	Electricity import by project activity from grid after apportioning of line losses between 33 kV metering point (Cluster meter) & Bulk metering point (132 kV metering point at Kurnool /220 kV metering point at Anantapur) at Enercon sub-station.
Measured/ Calculated / Default:	Calculated
Source of data:	Calculated
Value(s) of monitored parameter:	19.298

⁴ Please refer to section C for details of the meters and calibration.

Monitoring equipment:	Two-way tri-vector meters of 0.2s of accuracy class ⁵ .
Measuring/ Reading/ Recording frequency:	Monthly basis
Calculation method (if applicable):	The calculation procedure has been explained in details in section C.
QA/QC procedures:	QA/QC procedures are as implemented by Discom/ State utility pursuant to the provisions of the power purchase agreement except or otherwise explicitly stated in the PDD.
Purpose of data:	Baseline emission calculation
Additional comment:	The data will be archived both in electronic and hard paper format for crediting period + 2 years.

Data / Parameter:	T_E
Unit:	%
Description:	Percentage Line loss between the 33 kV metering points (cluster meters including project activity and non - project activity) and the Bulk metering point (132 kV metering point at Kurnool /220 kV metering point at Anantapur).
Measured/ Calculated / Default:	Calculated
Source of data:	Certified “transmission loss calculation sheet” given by state utility/APCPDCL (Andhra Pradesh Central Power Distribution Company Limited).
Value(s) of monitored parameter:	Directly applied (Please refer to the ER sheet).
Monitoring equipment:	Not applicable
Measuring/ Reading/ Recording frequency:	Monthly
Calculation method (if applicable):	The calculation procedure has been explained in details in section C.
QA/QC procedures:	QA/QC procedures are as implemented by Discom/ State utility pursuant to the provisions of the power purchase agreement except or otherwise explicitly stated in the PDD.
Purpose of data:	Baseline emission calculation
Additional comment:	The data will be archived both in electronic and hard paper format for crediting period + 2 years.

⁵ Please refer to section C for details of the meters and calibration.

D.3. Implementation of sampling plan

>>

Not applicable

SECTION E. Calculation of emission reductions or GHG removals by sinks**E.1. Calculation of baseline emissions or baseline net GHG removals by sinks**

>>

As per the registered PDD,

$$EG_{PJ,y} = EG_{Export,y} - EG_{Import,y}$$

Where,

$$EG_{Export,y} = EG_{JMR, Export,y} \times (1 - TE)$$

$$EG_{Import,y} = EG_{JMR, Import,y} \times (1 + TE)^6$$

⁷In line with the above, annual electricity supplied to the grid by the project for the monitoring period ($EG_{PJ,y}$) is: 44,049 MWh

Therefore,

$$\text{Annual Baseline Emissions Reduction: } ERY = EF_y \times EG_{PJ,y} \quad (EG_{PJ,y} \sim EG_{BL,y})$$

$$= 0.9172 \text{ tCO}_2\text{e/ MWh} \times 44,049 \text{ MWh}$$

$$= 40,401 \text{ tCO}_2\text{e}$$

$$ERY = BE_y - PE_y - LE_y \quad (\text{As } PE_y = LE_y = 0)$$

$$= 40,401 - 0 - 0$$

$$= 40,401 \text{ tCO}_2\text{e/yr}$$

E.2. Calculation of project emissions or actual net GHG removals by sinks

>>

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

E.3. Calculation of leakage

>>

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

⁶ Please refer to section C for details.

⁷ Please refer to the Emission Reduction (ER) spreadsheet for the detailed calculation.

E.4. Summary of calculation of emission reductions or net anthropogenic GHG removals by sinks

Monitoring period (01/01/2013 to 31/12/2013)	Baseline emissions or baseline net GHG removals by sinks (t CO₂e)	Project emissions or actual net GHG removals by sinks (t CO₂e)	Leakage (t CO₂e)	Emission reductions or net anthropogenic GHG removals by sinks (t CO₂e)
Total	40,401	0	0	40,401

E.5. Comparison of actual emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Item	Values estimated in ex-ante calculation of registered PDD	Actual values achieved during this monitoring period
Emission reductions or GHG removals by sinks (t CO₂e)	36,738	40,401

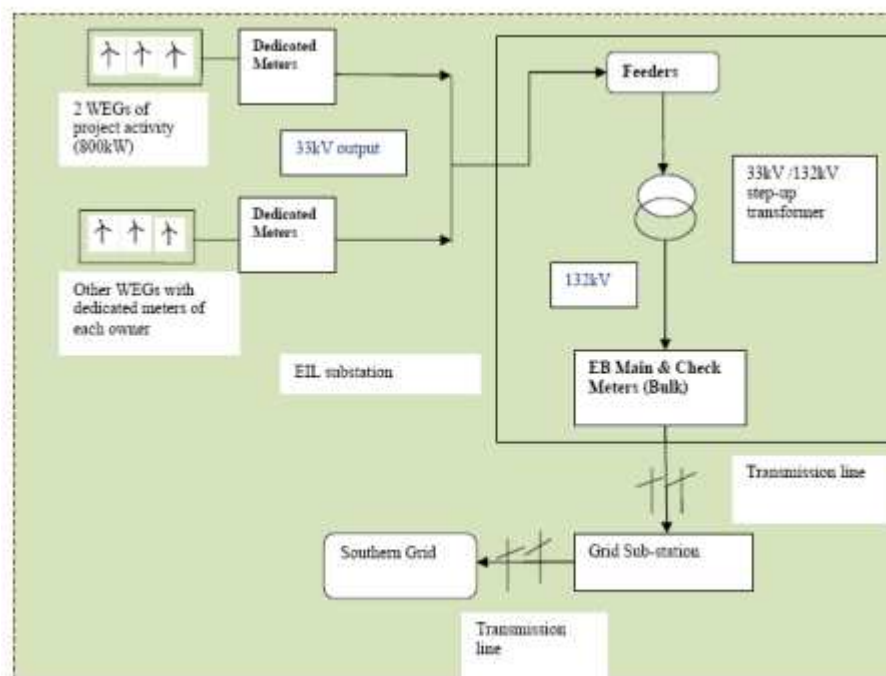
E.6. Remarks on difference from estimated value in registered PDD

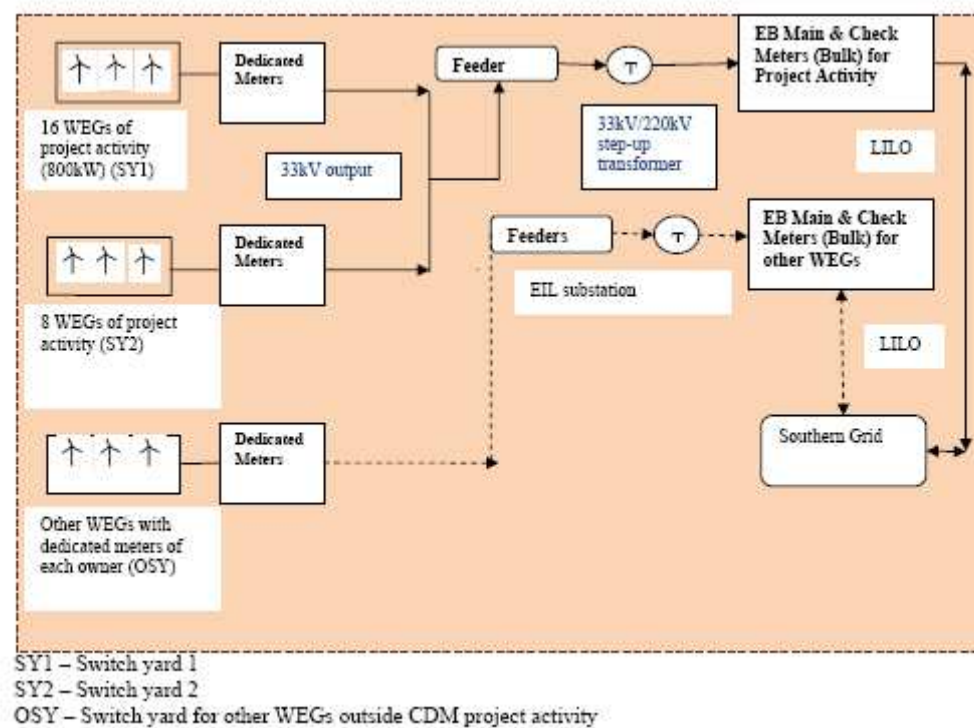
>>

The Emission Reduction (ER) value in the monitoring period is 10% higher as compared to the value estimated in the PDD due to the higher PLF observed at project site during the monitoring period.

E.7. Actual emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards

Item	Actual values achieved up to 31 December 2012	Actual values achieved from 1 January 2013 onwards
Emission reductions or GHG removals by sinks (t CO₂e)	0	40,401

Appendix – IKurnool site:

Anantpur site:

- - - - -

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
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 anthropogenic 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	28 May 2010	EB 54, Annex 34. Initial adoption.
Decision Class: Regulatory		
Document Type: Form		
Business Function: issuance		
Keywords: monitoring report, performance monitoring		