



**Monitoring report form
(Version 04.0)**

Complete this form in accordance with the Attachment "Instructions for filling out the monitoring report form" at the end of this form.

MONITORING REPORT

Title of the project activity	10.5 MW wind power project in Ossiya, Rajasthan by Gujarat Fluorochemicals Limited (GFL)
Reference number of the project activity	7724
Version number of the monitoring report	01
Completion date of the monitoring report	12/09/2014
Registration date of the project activity	24/12/2012
Monitoring period number and duration of this monitoring period	1st (01/01/2013 – 31/07/2014)(first and last days included)
Project participant(s)	Inox Renewables Limited
Host Party(ies)	India
Sectoral scope and selected methodology(ies), and where applicable, applied standardized baseline(s)	Sectoral Scope: 01– Energy Industries (Renewable/non-renewable sources). Approved Baseline Methodology used is "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" Reference: ACM0002 / Version 13.0.0.
Estimated amount of GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period in the registered PDD	28,122 tCO ₂ e
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period	23,868 tCO ₂ e
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period up to 31 December 2012(if applicable)	
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period from 1 January 2013 onwards (if applicable).	23,868 tCO ₂ e

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

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Purpose of the project activity and the measures taken to reduce greenhouse gas emissions:

The objective of the wind power project by IRL in Ossiya is to generate renewable electricity using wind power resources and to sell the generated output to the Rajasthan Discoms Power Procurement Centre (RDPPC) on the basis of Power Purchase Agreement (PPA).

The Project Activity has resulted in avoidance of greenhouse gas (GHG) emissions which would have otherwise occurred due to electricity generation by fossil fuel based power plants.

Brief description of the installed technology and equipments:

The project activity is the installation and operation of 7 numbers of horizontal axis wind turbine generators (WTGs) with power output of 1500 kW each Suzlon make (S-82), aggregating to total capacity of 10.5 MW in Jodhpur district of Rajasthan State. The power generated from the WTGs will be fed to grid using a step up transformer (690/33 KV) at each WTG and is fed to integrated NEWNE grid from the site to the 33/132 kV sub-station at Baori. The details of WTG's are given below

S.No.	WTG Location No.	Capacity (in MW)	Date of Commissioning
1.	P003	1.5	26/09/2009
2.	P009	1.5	27/09/2009
3.	P010	1.5	27/09/2009
4.	P011	1.5	27/09/2009
5.	P016	1.5	27/09/2009
6.	P017	1.5	27/09/2009
7.	P020	1.5	27/09/2009

Relevant dates for the project activity:

Relevant dates for the project activity are as under:

Start Date	Signing of the agreement with Suzlon Energy Limited for supply and Suzlon Infrastructure Services Limited for erection, commissioning and operations of WTG	08/08/2009
Commissioning of the 7 WTG's	First WTG	26/09/2009
	Seventh WTG	27/09/2009
Continued operation periods	From	27/09/2009
	To	Continuing upto end of monitoring period

The crediting period of the project activity commenced on 01/01/2013. This is the first Monitoring report.

Monitoring Period	From	To
First	01/01/2013	31/07/2014

Total emission reductions achieved in this monitoring period

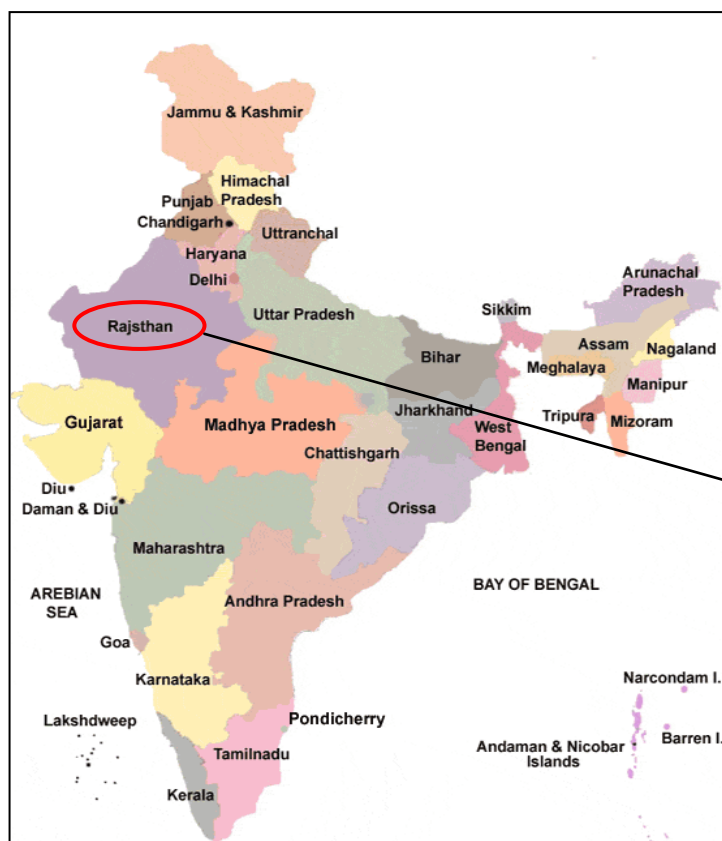
This is the First monitoring report for the project activity. The monitoring period considered is from 01/01/2013 to 31/07/2014 (both days inclusive.) The total Emission Reduction achieved in this monitoring period amounts to 23,868 tCO₂ equivalent.

A.2. Location of project activity

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The Project Activity is undertaken at Ossiya site which is located between Latitude's 26° 41'N & 26° 47'N and Longitude's 73° 02'E & 73° 04'E. The details of location of the individual WTGs are as follows:

S. No.	Location Number	Coordinates		Village	District	State/Country
		Longitude	Latitude			
		(E)	(N)			
1.	P003	73°02'24.3"	26°41'26.7"	Ossiya	Jodhpur	Rajasthan, India
2.	P009	73°02'44.2"	26°44'14.1"	Ossiya	Jodhpur	Rajasthan, India
3.	P010	73°02'21.5"	26°44'29.8"	Ossiya	Jodhpur	Rajasthan, India
4.	P011	73°02'14.2"	26°44'42.3"	Ossiya	Jodhpur	Rajasthan, India
5.	P016	73°02'31.1"	26°45'20.8"	Ossiya	Jodhpur	Rajasthan, India
6.	P017	73°02'44.7"	26°45'47.6"	Ossiya	Jodhpur	Rajasthan, India
7.	P020	73°03'02.4"	26°46'39.2"	Ossiya	Jodhpur	Rajasthan, India



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)
Government of India (host)	Private entity- Inox Renewables Limited is the new project participant. Gujarat Fluorochemicals Limited has voluntary withdraw as project proponent.	No
Other Parties Involved		
...	...	

A.4. Reference of applied methodology and standardized baseline

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Methodology Applied to the project activity- ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", Version 13.0.0 (Annex 13, EB 67)

UNFCCC CDM Website Reference:

(http://cdm.unfccc.int/filestorage/D/Y/P/DYPFI935XBG274NWH6O8CM1KEZR0VU/EB67_repan13_ACM0002_ver13.0.0.pdf?t=aFd8bmJyeXExfDAQ35io_SYqIEeT9Oc47oKE)

Methodology Tool: Tool to calculate emission factor for an electricity system, Version 02.2.1

UNFCCC CDM Website Reference:

(<http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v02.2.1.pdf>)

Methodology Tool: Tool for the demonstration and assessment of Additionality, Version 06.0.0

UNFCCC CDM Website Reference:

(<http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v06.0.0.pdf>)

A.5. Crediting period of project activity

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The Crediting Period for the registered project activity has been detailed below:

Type of Crediting Period: Renewable Crediting Period

Start Date of Crediting Period: 01/01/2013

Length of Crediting Period: 7 Years

As per the registered PDD, the project proponent confirmed that the crediting period would be from 01/01/2013 (or the date of registration whichever is later). Since the Project got registered with UNFCCC on 24/12/2012, therefore the Crediting Period starts from 01/01/2013.

The crediting dates are from 01/01/2013 to 31/12/2019 (both Inclusive).

The current monitoring period is the first periodic verification of the monitoring period starting from 01/01/2013 to 31/07/2014 (both days included)

A.6. Contact information of responsible persons/ entities

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Contact Information of the responsible persons/entities for completing the CDM MR FORM and project participant has been provided in the Appendix 1.

SECTION B. Implementation of project activity

B.1. Description of implemented registered project activity

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The project activity involved installation of 7 numbers of 1500 kW Suzlon make (S-82) wind turbine generators (WTG) in Jodhpur District of Rajasthan State of India. . The start date of the project is 08/08/2009, and the starting date of the first crediting period is 01/01/2013. The relevant dates for the project activity are as follows:

Date	Event
08/08/2009	Signing of the agreement with Suzlon Energy limited for supply. Also the start date of the project.
26/09/2009	P003 Erected and Commissioned
27/09/2009	P009 Erected and Commissioned
27/09/2009	P010 Erected and Commissioned
27/09/2009	P011 Erected and Commissioned
27/09/2009	P016 Erected and Commissioned
27/09/2009	P017 Erected and Commissioned
27/09/2009	P020 Erected and Commissioned

The project activity is implemented and is operated in accordance with the registered CDM-PDD. All the turbines undertaken as a part of the CDM Activity have been successfully erected and commissioned as per the above details, and are operating successfully since commissioning. There has been no change in technology and no change in project equipment right from date of commissioning to the end of the current monitoring period. All the wind turbines of this project activity are in one location. During this monitoring period, the project had a smooth data transfer and good grid connection, and no special events happened. No events or situations occurred during the monitoring period, which may impact the applicability of the methodology.

During this monitoring period, the project activities were in normal operation during most of the time except for the routine operational stoppages and downtime for scheduled preventive and other maintenance.

During the monitoring period, following WTG's were shut down for the following periods for blade repairing work and other maintenance:

Location No.	Date		Duration (days)	Reason	Corrective Action
	From	To			
P017	05/03/2013	12/03/2013	8.00	All power cable theft	All power cables replaced
P017	22/03/2013	02/04/2013	12.00	Encoder failure	Encoder replaced
P010	05/04/2013	08/04/2013	4.00	Battery Bank failure	Battery bank no.2 replaced
P009	24/07/2013	01/08/2013	9.00	Battery charger card failure	Battery charger card replaced
P009	05/08/2013	09/08/2013	5.00	Battery charger card failure	Battery charger card replaced

P016	19/08/2013	26/08/2013	8.00	RS Manual software stop	Contract Violation
P017	19/09/2013	26/08/2013	8.00	RS Manual software stop	Contract Violation
P009	18/09/2013	23/09/2013	6.00	Yaw sensor stop	Yaw sensor replaced & Yaw MPCB setting done
P017	16/12/2013	20/12/2013	5.00	Yaw sensor stop	Yaw brake & clutch plate replaced
P020	01/01/2014	05/01/2014	4.00	Battery Bank failure	Battery bank no.2 replaced
P009	11/04/2014	21/04/2014	11.00	Cable theft	Power cables replaced
P020	29/05/2014	20/06/2014	23.00	Cable theft	Power cables replaced

B.2. Post registration changes

B.2.1. Temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline

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No deviation has been applied to this monitoring period.

B.2.2. Corrections

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There are no corrections to the project information or parameters fixed at validation.

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

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There are no permanent changes from the registered monitoring plan, applied methodologies.

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

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There are no changes to the project design of the project activity.

B.2.5. Changes to start date of crediting period

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There are no changes to the start date of the crediting period.

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

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The project activity is not an afforestation or reforestation project. Hence, this section is not relevant to the project activity.

SECTION C. Description of monitoring system

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C.1.1 PP has applied approved monitoring methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", Version 13.0.0 (Annex 13, EB 67)

UNFCCC CDM Website Reference:

(http://cdm.unfccc.int/filestorage/D/Y/P/DYPFI935XBG274NWH6O8CM1KEZR0VU/EB67_repan13_ACM0002_ver13.0.0.pdf?t=aFd8bmJyeXExfDAQ35io_SYqlEeT9Oc47oKE)

C.1.2 The applicability conditions of this Approved Monitoring Methodology are:

The project activity avoids the expansion of grid connected fossil fuel based power generation, as it utilises renewable resources (wind energy) to generate power.

The adopted baseline methodology ACM0002 Version 13.0.0 has been chosen for the project activity based on fulfilment of the applicability conditions as described below:

Applicability criteria of ACM0002 13.0.0	Project activity measures
The project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit	The project activity involves the installation of a greenfield wind based renewable power plant. Hence, this applicability criterion is satisfied.
In the case of capacity additions, retrofits or replacements (except for wind, solar, wave or tidal power capacity addition projects which use Option 2: on page 10 to calculate the parameter $EG_{PJ,y}$): the existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity	The project activity is a Greenfield project and does not involve retrofits, replacements or capacity additions to an existing plant. Hence, this criterion is not applicable.
In case of hydro power plants: <ul style="list-style-type: none"> ○ The project activity is implemented in an existing reservoir, with no change in the volume of reservoir; or ○ The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/m²; or ○ The project activity results in new 	The project activity is not a hydro power plant. Hence this criterion is not applicable.

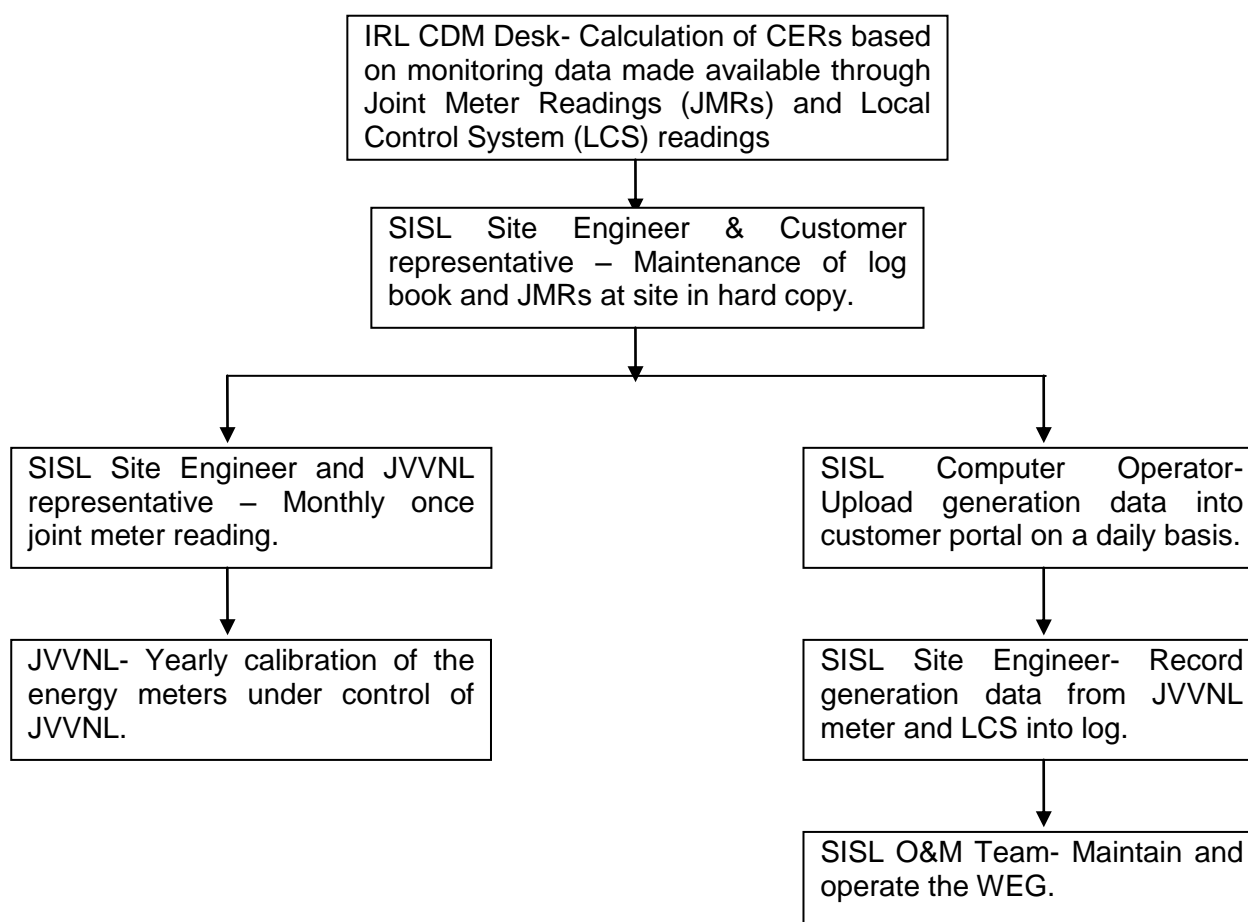
reservoirs and the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m ² .	
<p>The methodology is not applicable to the following:</p> <ul style="list-style-type: none"> • Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site; • Biomass fired power plants; • Hydro power plants that result in new reservoirs or in the increase in existing reservoirs where the power density of the power plant is less than 4 W/m². 	The project activity is wind based renewable electricity generation and does not involve switching from fossil fuels to renewable energy sources.
In the case of retrofits, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, i.e. to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance".	The project activity is a greenfield project and does not involve retrofits, replacements or capacity additions to an existing plant. Hence, this criterion is not applicable.

It can be seen from the above table that the approved methodology ACM0002 Version13.0.0 is applicable to the project activity.

C.1.3 GFL has undertaken an operation and maintenance agreement with the supplier of the wind turbines i.e. Suzlon Infrastructure Services Limited. The agreement is for a period of 18 years at first and may be renewed on its expiry on the terms and conditions mutually agreed upon. The performance of the mills, safety in operation and scheduled /breakdown maintenances are organized and monitored by the contractor. So the authority and responsibility of O&M lies with the contractor. Since the ownership of the project activity has been transferred to IRL. Accordingly O & M responsibility had been signed with IRL (Inox Renewables Limited).

The monitoring personnel receive intensive training at the Suzlon Manufacturing facility, conducted by Suzlon themselves or an external agency, before being appointed at the site to look after the operations.

The Organisation structure and responsibility of people involved is given below:



C.1.4 IRL had also entered into Power Purchase Agreement with SEL and JVVNL and operating records are also being maintained as per this Agreement.

C.1.5 The project activity essentially involves generation of electricity from wind, the employed WTG can only convert wind energy into electrical energy and cannot use any other input fuel for electricity generation. As the operation of WTGs is emission free, no emissions are produced during the lifetime of the WTG.

The project activity consists of 7 WTGs. The power generated by WTG is at 690 V, which is stepped up by a step up transformer and fed into NEWNE grid through 33 kV Feeder line at 132 KV sub-station at Baori, Jodhpur.

Energy meters are located at sub-station for the feeder at which WTGs are connected, for monitoring export and import of electricity from the grid of respective feeder. The net electricity fed into respective feeder line by WTGs part of project activity will be added together to calculate the net electricity from the project activity. This construes the electricity exported by individual power plants to the grid minus the quantity of electricity imported by individual power plants from the grid.

Power from WTG's of other project activities is also fed in the same 33 kV feeder line. This common feeder line culminates at the 33 kV/132 kV substation, where the joint-metering is done on monthly basis.

The net electricity supplied to grid is the basis for estimating emission reductions from the proposed project activity.

Net Electricity: EG facility, y = EGy, net, feeder 1

The joint-metering is done at the 33/132 kV RRVPNL substation, having shared Main meter and check meter. The metered net electricity is apportioned among the various project activities based on the electricity metered at the respective WTG locations (or reading at the WTG-Controller).

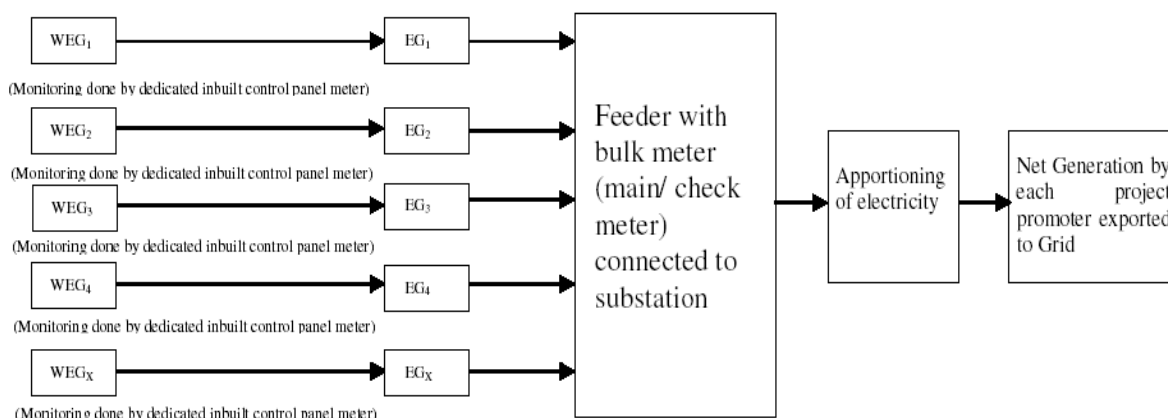
A combined JMR certificate is issued by RRVPNL for all the WTGs connected to the respective feeder at substation. Apportioning of electricity for individual project activities is done by Suzlon on the basis of readings of respective WTGs controller. On the basis of this apportioning, Suzlon issues a credit note to project proponent providing following details for respective wind farms:

- Net electricity exported to grid
- Total electricity exported to grid
- Total electricity imported from grid

The net electricity supplied to grid is calculated as follows:

Net Electricity: EG y, net,feeder1, = EGy, net feeder 1, Export - EGy, net feeder1, Import

This construes the net electricity exported by individual power plants to the grid
Metering Diagram:



Apportioning procedures would be applied as follows:

The electricity exported and imported from feeder would be apportioned based on the ratio of electricity generation from project activity WTGs and electricity generation from all WTGs connected to the feeder as shown in the example below:

EG y, net, feeder1, = EGy, net feeder 1, Export - EGy, net feeder1, Import

Apportioned electricity export, feeder 1 = (EGy, WTG, feeder1, PA / EGy, WTG, feeder1) * EGy, net feeder 1, Export

Apportioned electricity import, feeder 1 = (EGy, WTG, feeder1, PA / EGy, WTG, feeder1) * EGy, net feeder 1, Import

Apportioned net electricity supplied to grid, feeder 1 = (EGy, WTG, feeder1, PA / EGy, WTG, feeder1) * (EGy, net feeder 1, Export - EGy, net feeder 1, Import)

C.1.6 The Metering equipment consists of main and check meters identical in make, technical standards and of 0.2% accuracy class. The meters installed at the metering point have four quadrant, three phase, four wire provision for online reading.

C.1.7 QUALITY CONTROL AND QUALITY ASSURANCE

The primary recording of the electricity fed to the state utility grid is carried out jointly at the incoming feeder of the RRVPNL. The joint measurement is carried out once in a month in presence of both parties (the SEL's representative and officials of the RRVPNL). This reading is then translated into a monthly generation report which is forwarded by JVVNL to IRL. Based on this report RRVPNL gives credit to SEL for the electricity generation. This data is cross checked with invoices raised by IRL to RRVPNL for billing of sale of power supplied.

C.1.8 CALIBRATION / MAINTENANCE OF METERS

The Electronic Meters that are used for monitoring are under the purview of RRVPNL, and consists of main and check meters identical in make, technical standards and of 0.2% accuracy class

These are four quadrant, three phase, four wire and is, installed before the grid. This meter is located at the delivery point of wind power in RRVPNL grid at 33/132 KV substation at Baori District of Jodhpur, Rajasthan

The frequency of testing of these meters is annual as specified in the PPA and is to be done by JVVNL. The details of calibration are given in Annexure 2. RRVPNL is the State Electricity Utility Company which functions under Government of Rajasthan (GoM) as per Central Electricity Act and it is responsible for Energy Meter calibration checks and faulty meters, if any, are replaced immediately.

The import and export of electricity is continuously monitored by the export/ import meter and the data is recorded on a monthly basis jointly by authorized representatives of Suzlon and RRVPNL.

Net electricity generated is calculated from the joint meter reading and recorded /archived in paper/electronic form.

These meters are in possession of RRVPNL, and are kept in sealed meter box at the substation under lock & key as per statutory requirements. The project proponent can only see readings through glass window of sealed meter box.

The electricity supplied to the grid from the individual turbines is being apportioned based on the readings recorded by the digital meters located on the controller of individual WTG's.

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.)

D.1.1	
Data / Parameter:	EF_{grid,OM,y}
Unit:	tCO ₂ /MWh
Description:	Operating Margin emission factor for NEWNE grid
Source of data:	Referred from CO ₂ Baseline Database for the Indian Power Sector Prepared by: Central Electricity Authority, Version 5.0.

Value(s) applied):	1.0049 tCO ₂ e/MWh
Purpose of data:	Baseline Emission Calculations
Additional comment:	This is fixed for the entire Crediting Period

D.1.2	
Data / Parameter:	EF_{grid,BM,y}
Unit:	tCO ₂ e/MWh
Description:	Build Margin emission factor for NEWNE grid
Source of data:	Referred from CO ₂ Baseline Database for the Indian Power Sector prepared by Central Electricity Authority, Version 5.0.
Value(s) applied):	0.6752 tCO ₂ e/MWh
Purpose of data:	Baseline Emission Calculations
Additional comment:	This is fixed for the entire Crediting Period

D.1.3	
Data / Parameter:	EF_{grid,CM, y}
Unit:	tCO ₂ /MWh
Description:	Combined Margin CO ₂ emission factor for NEWNE grid
Source of data:	The Central Electricity Authority (CEA) under the Ministry of Power, Government of India, has estimated the Combined Margin emission factor for the Western grid, based on 75% of OM and 25% of BM values, CEA, Version 5.0, the details of which are available on the following website. http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm
Value(s) applied):	0.9225 tCO ₂ e/MWh
Purpose of data:	Baseline Emission Calculations
Additional comment:	This is fixed for the entire Crediting Period

D.2. Data and parameters monitored

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

D.2.1			
Data / Parameter:	EG _{facility, y}		
Unit:	MWh (Mega Watt Hour)		
Description:	Net Electricity supplied to the grid. The project activity consists of 7 WTGs. The power generated from these WTGs is stepped up by a step up transformer and fed into 33 kV Feeder line. Thus EG _{facility, y} = EG _{y, net, feeder 1}		
Measured/ Calculated / Default:	Calculated from measured values.		
Source of data:	Monthly Credit note issued by Operation and maintenance contractor (Suzlon).		
Value(s) of monitored parameter:	Parameter	Value	Reference
	EG _{y, Export}	26063.793	Table D.2.3
	EG _{y, Import}	190.181	Table D.2.4
	EG _y	25873.612	EG _{y, net, feeder 1}

Monitoring equipment:	Metering is carried out through electronic tri-vector meters of accuracy class 0.2% required for the project These are four quadrant, three phase, four wire and is, installed before the grid. Calibration procedure is outlined in Section C of Monitoring Report and details are given in Annexure 2 of this Monitoring Report. Frequency of Calibration: Yearly
Measuring/ Reading/ Recording frequency:	Measuring Frequency: Continuous Recording Frequency: Continuous Reading Frequency: Monthly
Calculation method (if applicable):	Net Electricity: $EG_{\text{facility, y}} = EG_{\text{y, net, feeder 1}}$
QA/QC procedures:	Net electricity supplied to the grid would be cross-checked against invoices for sale of electricity. Regular calibration of all the meters is undertaken at specified intervals as per EPA and faulty meters, if any, are replaced immediately.
Purpose of data:	Baseline Emission Calculations
Additional comment:	Data will be kept for two years beyond each crediting period.

D.2.2	
Data / Parameter:	$EG_{\text{y, net, feeder 1}}$
Unit:	MWh (Mega Watt Hour)
Description:	Net electricity supplied to grid in feeder 1
Measured/ Calculated / Default:	Calculated from measured values.
Source of data:	Monthly Credit note issued by Operation and maintenance contractor (Suzlon).
Value(s) of monitored parameter:	25873.612
Monitoring equipment:	Metering is carried out through electronic tri-vector meters of accuracy class 0.2% required for the project These are four quadrant, three phase, four wire and is, installed before the grid. Calibration procedure is outlined in Section C of Monitoring Report and details are given in Appendix 2 of this Monitoring Report. Frequency of Calibration: Yearly
Measuring/ Reading/ Recording frequency:	Measuring Frequency: Continuous Recording Frequency: Continuous Reading Frequency: Monthly
Calculation method (if applicable):	All Joint Meter Readings (JMR) for the month are taken periodically by authorised RRVPNL for all the WTGs connected to the respective substation. Apportioning of electricity for individual project activities is done by Suzlon on the basis of readings of respective WTGs controller. On the basis of this apportioning, Suzlon issues a credit note to IRL as a monthly report having mentioned total export, total import and net export. Net Electricity: $EG_{\text{y, net, feeder1}} = EG_{\text{y, net feeder 1, Export}} - EG_{\text{y, net feeder1, Import}}$ This construes the net electricity exported by individual power plants to the grid.
QA/QC procedures:	This data will be cross checked with invoices raised by IRL to RDPPC for billing of sale of power supplied. Regular calibration of the meter is undertaken at specified intervals as per PPA and faulty meters, if any, are replaced immediately.
Purpose of data:	Baseline Emission Calculation
Additional comment:	Data will be kept for two years beyond each crediting period.

D.2.3	
Data / Parameter:	EG _{y, net feeder 1, Export}
Unit:	MWh (Mega Watt Hour)
Description:	Total quantity of Electricity exported to grid by all WTGs connected to feeder1
Measured/ Calculated / Default:	Calculated from measured values.
Source of data:	Monthly JMR Certificate issued by RRVPNL
Value(s) of monitored parameter:	26063.793
Monitoring equipment:	Metering is carried out through electronic tri-vector meters of accuracy class 0.2% required for the project These are four quadrant, three phase, four wire and is, installed before the grid. Calibration procedure is outlined in Section C of Monitoring Report and details are given in Appendix 2 of this Monitoring Report. Frequency of Calibration: Yearly
Measuring/ Reading/ Recording frequency:	Measuring Frequency: Continuous Recording Frequency: Continuous Reading Frequency: Monthly
Calculation method (if applicable):	Total electricity exported to RRVPNL will be measured at the main meter located at the sub-station and connected to the incoming feeder. This measured electricity will be the sum total electricity exported by all WTGs connected to the feeder including electricity generated from WTGs other than the project activity.
QA/QC procedures:	Annual calibration of all the meters will be undertaken at required intervals and faulty meters will be duly replaced immediately. The meters will be of accuracy class 0.2s. The data will be monitored once a month. Calibration frequency: Annual
Purpose of data:	Baseline
Additional comment:	The data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.

D.2.4	
Data / Parameter:	EG _{y, net feeder 1, Import}
Unit:	MWh (Mega Watt Hour)
Description:	Total quantity of Electricity imported from grid by all WTGs connected to feeder 1
Measured/ Calculated / Default:	Calculated from measured values.
Source of data:	Monthly JMR Certificate issued by RRVPNL
Value(s) of monitored parameter:	190.181
Monitoring equipment:	Metering is carried out through electronic tri-vector meters of accuracy class 0.2% required for the project These are four quadrant, three phase, four wire and is, installed before the grid. Calibration procedure is outlined in Section C of Monitoring Report and details are given in Appendix 2 of this Monitoring Report. Frequency of Calibration: Yearly
Measuring/ Reading/ Recording frequency:	Measuring Frequency: Continuous Recording Frequency: Continuous Reading Frequency: Monthly

Calculation method (if applicable):	Total electricity imported to RRVPNL will be measured at the main meter located at the sub-station and connected to the incoming feeder. This measured electricity will be the sum total of electricity imported from all WTGs connected to the feeder including electricity generated from WTGs other than the project activity.
QA/QC procedures:	Annual calibration of all the meters will be undertaken at required intervals and faulty meters will be duly replaced immediately. The meters will be of accuracy class 0.2s. The data will be monitored once a month. Calibration frequency: Annual
Purpose of data:	Baseline
Additional comment:	The data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.

D.3. Implementation of sampling plan

>>
NA

SECTION E. Calculation of emission reductions or GHG removals by sinks

E.1. Calculation of baseline emissions or baseline net GHG removals by sinks

>>

In terms of the Approved Methodology (ACM0002/Version 13.0.0), 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 (L_y), as follows:

$$ER_y = BE_y - PE_y - L_y$$

Calculation of BE_y

Baseline emissions (BE_y in tCO_2) are the product of the baseline emissions factor (EF_y in tCO_2/MWh) times the electricity supplied by the Project Activity to the grid (EG_y in MWh) i.e.

$$\begin{aligned} BE_y &= EF_y * EG_y \\ &= 0.9225 * 25873.612 \\ &= 23,868 \text{ tCO}_2 \text{ (rounded down)} \end{aligned}$$

Parameter	Value	Reference
EF_y	0.9225	Table D.1.3
EG_y	25873.612	Table D.2.1
BE_y	23,868	Computed (rounded down)

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

>>

According to the chosen baseline methodology ACM0002, for wind energy based renewable energy project activities, there are no emissions.

Hence, $PE_y = 0$.

E.3. Calculation of leakage

>>

According to ACM0002, the main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction, fuel handling (extraction, processing, and transport), and land inundation (for hydroelectric projects). Project participants do not need to consider these emission sources as leakage in applying this methodology.

Project activities using ACM0002 shall not claim any credit for the project on account of reducing these emissions below the level of the baseline scenario. Thus the leakage emissions are nil. Hence, $L_y = 0$

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

Item	Baseline emissions or baseline net GHG removals by sinks (t CO ₂ e)	Project emissions or actual net GHG removals by sinks (t CO ₂ e)	Leakage (t CO ₂ e)	Emission reductions or net anthropogenic GHG removals by sinks (t CO ₂ e)
Total	23,868	0	0	23,868

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 CO ₂ e)	28,122 (577 days equivalent of annually 17,790 emission reduction estimated in the registered PDD)	23,868

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

>>

The emission reductions in the monitoring period from 01/01/2013 to 31/07/2014 are 15.13% lower than the estimation. This is due to the fact that few WTG's were completely shut down for considerable period of time for operation and maintenance related activities (please refer para B.1).

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	23,868

Annexure 1 - Monthly Emission Reductions(BEy)						
Monitoring period			Total net electricity exported (in MWh)	Baseline Emission Factor (tCO ₂ e/MWh)	Total emissions reductions (tCO ₂ e)	Total emissions reductions (tCO ₂ e)
01/01/2013	to	31/01/2013	719.705	0.9225	663.928	663.928
01/02/2013	to	28/02/2013	1358.052	0.9225	1252.803	1252.803
01/03/2013	to	31/03/2013	1057.441	0.9225	975.489	975.489
01/04/2013	to	30/04/2013	1025.220	0.9225	945.765	945.765
01/05/2013	to	31/05/2013	2325.311	0.9225	2145.099	2145.099
01/06/2013	to	30/06/2013	2139.562	0.9225	1973.746	1973.746
01/07/2013	to	31/07/2013	1344.514	0.9225	1240.314	1240.314
01/08/2013	to	31/08/2013	1243.679	0.9225	1147.294	1147.294
01/09/2013	to	30/09/2013	1434.901	0.9225	1323.696	1323.696
01/10/2013	to	31/10/2013	589.351	0.9225	543.676	543.676
01/11/2013	to	30/11/2013	694.416	0.9225	640.599	640.599
01/12/2013	to	31/12/2013	756.242	0.9225	697.633	697.633
01/01/2014	to	31/01/2014	1218.771	0.9225	1124.316	1124.316
01/02/2014	to	28/02/2014	1244.110	0.9225	1147.691	1147.691
01/03/2014	to	31/03/2014	1301.939	0.9225	1201.039	1201.039
01/04/2014	to	30/04/2014	1060.028	0.9225	977.876	977.876
01/05/2014	to	31/05/2014	1659.910	0.9225	1531.267	1531.267
01/06/2014	to	30/06/2014	2869.159	0.9225	2646.799	2646.799
01/07/2014	to	31/07/2014	1831.301	0.9225	1689.375	1689.375
Total (Rounded down)			25873.612	0.9225	23868.407	23868.000

Annexure - 2: Details of Annual Meter Testing of meters as per PPA

S.No.	Particulars	Main Meter	Backup Meter
	Meter No.	RJB73523	RJB73520
	Feeder No.	1 (SEL-124)	1 (SEL-124)
1	Certificate No.	C&I/CAL/S12-03/206	C&I/CAL/S/12-03/205
	Type	E3M021	E3M021
	Test Certificate Date	20/03/2012	20/03/2012
	Result	OK	OK
S.No.	Particulars	Main Meter	Backup Meter
	Meter No.	RJB73523	RJB73520
	Feeder No.	1 (SEL-124)	1 (SEL-124)
1	Certificate No.	YMPL/240657/48719	YMPL/240657/48720
	Type	E3M021	E3M021
	Test Certificate Date	22/12/2013	22/12/2013
	Result	OK	OK

Appendix 1. Contact information of project participants and responsible persons/ entities

Project participant and/or responsible person/ entity	<input checked="" type="checkbox"/> Project participant <input type="checkbox"/> Responsible person/ entity for completing the CDM-MR-FORM
Organization name	Inox Renewables Limited
Street/P.O. Box	Old Padra Road
Building	2 nd Floor, ABS Towers
City	Vadodara
State/Region	Gujarat
Postcode	390 007
Country	India
Telephone	+91 265 233 0057, 619 8111
Fax	+91 265 231 0312
E-mail	deepakash@gfl.co.in
Website	www.inoxrenewables.com
Contact person	
Title	Director & Group Head (Corporate Head)
Salutation	Mr.
Last name	Asher
Middle name	-
First name	Deepak
Department	-
Mobile	+91 98 7950 7950
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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
04.0	25 June 2014	<p>Revisions to:</p> <ul style="list-style-type: none"> • Include the Attachment: Instructions for filling out the monitoring report form (these instructions supersede the "Guideline: Completing the monitoring report form" (Version 04.0)); • Include provisions related to standardized baselines; • Add contact information on a responsible person(s)/ entity(ies) for completing the CDM-MR-FORM in A.6 and Appendix 1; • Change the reference number from <i>F-CDM-MR</i> to <i>CDM-MR-FORM</i>; • Editorial improvement.
03.2	5 November 2013	Editorial revision to correct table in page 1.
03.1	2 January 2013	Editorial revision to correct table in section E.5.
03.0	3 December 2012	Revision required to introduce a provision on reporting actual emission reductions or net 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		