



**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	3 MW bundled wind Power Project in Tamil Nadu
Reference number of the project activity	7585 ¹
Version number of the monitoring report	01
Completion date of the monitoring report	03/03/2015
Registration date of the project activity	04/10/2012
Monitoring period number and duration of this monitoring period	1 st Monitoring period from 01/01/2013 to 08/12/2014
Project participant(s)	M/s Mangalam Fashions Limited M/s Woodside Fashions Limited
Host Party(ies)	India
Sectoral scope and selected methodology(ies), and where applicable, applied standardized baseline(s)	Sectoral Scope 1: Energy Industries (renewable - /non renewable sources) Methodology: - AMS I.D – Grid connected renewable electricity generation – version 17
Estimated amount of GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period in the registered PDD	11,844 tCO ₂
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period	8,802 tCO ₂
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period up to 31 December 2012(if applicable)	0 tCO ₂
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period from 1 January 2013 onwards (if applicable).	8,802 tCO ₂

¹ <https://cdm.unfccc.int/Projects/DB/SGS-UKL1349275373.71/view>

SECTION A. Description of project activity

A.1. Purpose and general description of project activity

The project is a voluntary step of the project participant towards the development of renewable energy sector, given the dwindling resources of fossil fuels, increased threat of global warming and the concerns on environmental protection.

Erection of wind turbines was preferred since the state is blessed with long coast line and good wind speeds for harnessing wind energy. The State of Tamil Nadu is committed to have investment in clean and green energy to reduce GHG emissions.

Project activity helps in exploiting the wind energy potential and leads to a cleaner environment through lower greenhouse gas emissions and other pollutants and greater energy security of the nation through lower fuel consumption, fossil fuel conservation for other activities.

The project is a 3 MW wind-based power project set up by Mangalam Fashions Ltd. and Woodside Fashions Ltd., who have got together to form a bundle to reduce their transaction cost for the CDM project activity. The project involves the operation of 2 wind machines, of capacity 1.5 MW each, at village Eragampatti in district Tirupur, Tamil Nadu, India. The technology/ machines have been supplied by Suzlon Energy Limited, India.

The details of wind mills are summarized in Table1 below:

S. No.	Owner	Location	Model
1	Mangalam Fashions Ltd (1.5 MW)	Village:- Eragampatti, District:- Tirupur	WTG-model S82 - 1500 KW
2	Woodside Fashions Ltd (1.5 MW)	Village:- Eragampatti, District:- Tirupur	WTG-model S82 - 1500 KW

Brief description of the installed technology and equipments:

Proposed Project is a wind power project that utilizes for electricity generation the wind energy, which is a renewable form of energy. The generated electricity is fed into the southern regional grid for transmission and distribution.

Project activity includes the operation of two Wind Turbine Generators (WTG) of capacity 1.5 MW each. These WTGs are procured from Suzlon Energy Ltd.

The technology is a clean and safe technology since there are no GHG emissions associated with Wind electricity generation. Technical specifications of the WTGs are given below:

Technical Specifications: S82-1500 kW	
Parameters	Specification
Operational Data	
Rated Power	1.5 MW
Cut in wind speed	4 m/s
Rated wind speed	14 m/s
Cut-off wind speed	20 m/s
Survival wind speed	52.5 m/s
Rotor:	
Type	3 Blades, Upwind / Horizontal axis
Diameter	82 m
Rotational speed at rated power	15.6 to 18.4 rpm
Rotor blade material	Epoxy bonded fiber glass
Swept area	5281 m ²

Power regulation	Active pitch regulated with Suzlon Flexi Slip System
Gear Box:	
Type	1 planetary stage / 2 helical stages
Ratio	1 : 95.09
Nominal load	1650 kW
Type of cooling	Forced oil cooling lubrication system
Generator:	
Type	Single speed induction generator with slip rings, variable rotor resistance via Suzlon Flexi slip system
Speed at rated power	1511 rpm
Rated power	1500 kW
Rated voltage	690 V AC (phase to phase)
Frequency	50 Hz
Insulation	Class H
Enclosure	IP 54 /IP 23 (slip ring unit)
Cooling system	Air cooled
Tower:	
Type	Tubular tower (corrosion proof painting on inner and outer surface) with welded steel plates
Tower height	76 m
Hub height (including foundation)	Approximately 78.5 m
Braking System:	
Aerodynamic braking	3 Independent systems with blade pitching
Mechanical braking	Hydraulic fail safe disk brake system
Yaw System:	
Type	Active electrical yaw motor
Bearing	Polyamide Slide bearing with gear ring & automatic greasing system
Protection	Cable twist sensor, proximity sensor
Pitch System:	
Type	3 independent blade pitch control with battery backup for each blade
Operating range	-5 ° to + 90 °
Resolution	0.1 to 10 Deg
Controller:	Suzlon Control System with following salient features: Programmable microprocessor based, high-speed data communication, active multilevel security, Sophisticated operating software, advanced data collection, remote monitoring & control option, UPS back up, real time operation indication.

Relevant dates for the project activity:

The Commissioning dates, capacity, location number, location for all the WEGs of the project activity for each WEG is provided in table below:

WTG Owner	WTG Capacity (MW)	Start date of the project activity	Commissioning Date	Registration of project activity under CDM
Mangalam Fashions Ltd	1.5	31/05/2010	04/10/2010	04/10/2012
Woodside Fashions Ltd	1.5			

The project has been under continuous operation since commissioning; except for regular shut downs for O&M measures.

Total emission reductions achieved in this monitoring period:

During the reported monitoring period 01/01/2013 to 08/12/2014 (First and last date included) the project activity has supplied 9,609 MWh of electricity, and thus contributing to the GHG reductions of 8,802 tCO₂.

A.2. Location of project activity

WTG Owner	WTG ID	Village	District	State	Latitude	Longitude
Mangalam Fashions Ltd	U2006	Eragampatti	Tirupur	Tamil Nadu	N10° 48' 47"	E77° 21' 54.9"
Woodside Fashions Ltd	U2005				N10° 49' 7.6"	E77° 21' 50.2"

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	Mangalam Fashions Ltd (Public Entity)	No
India	Woodside Fashions Ltd (Public Entity)	No

A.4. Reference of applied methodology and standardized baseline

Title : Grid connected renewable electricity generation²
 Sectoral Scope : 01-Energy Industries (renewable/non renewable sources)
 Type : I-Renewable Energy Projects
 Category : D
 Reference : a. AMS.I.D, Version 17, EB 61
 b. Tool to calculate the emission factor for an electricity system, version 02.2.1

A.5. Crediting period of project activity

Type of crediting period	Fixed
Crediting period from	01/01/2013 - 31/12/2022
Length of the Crediting Period	10 Years
Monitoring period from	01/01/2013 to 08/12/2014
Length of the Monitoring Period	707 Days

A.6. Contact information of responsible persons/ entities

Organization name	Mangalam Fashions Limited
Contact person	Mr. Deepak Bachhawat
Address	22, Camac Street, Kolkata - 700 016, West Bengal

² <http://cdm.unfccc.int/UserManagement/FileStorage/V9LRSXKP24Q7YT6HZDUBO3C0ING8AJ>

Telephone	+91 33 22837495/6
Email	bachhawatcal@gmail.com

Organization name	Woodside Fashions Ltd
Contact person	Mr. Deepak Bachhawat
Address	22, Camac Street, Kolkata - 700 016, West Bengal
Telephone	+91 33 22837495/6
Email	bachhawatcal@gmail.com

The entities indicated in the tables above are also the project participant for this project activity.

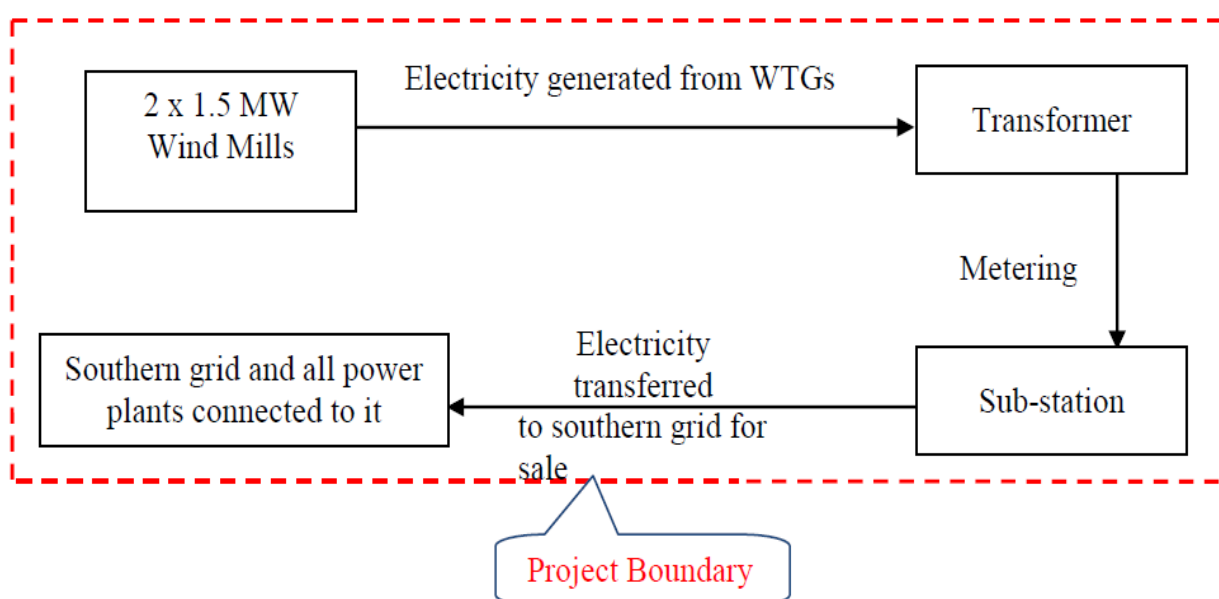
SECTION B. Implementation of project activity

B.1. Description of implemented registered project activity

The total installed capacity of the project is 3 MW, which comprises in total 2 no. Wind Turbine Generator (WTG) at Tamil Nadu. The technology used for the project activity is of Suzlon Energy Limited. The commissioning date of all the WTGs of the project activity is given below.

WTG Owner	WTG No.	Capacity (MW)	Village	State	Commissioning Date
Mangalam Fashions Ltd	U2006	1.5	Eragampatti	Tamil Nadu	04/10/2010
Woodside Fashions Ltd	U2005				

All the WTGs have run successfully during the reported monitoring period. All the physical and technical features as stated in the registered PDD are in place and project has been operated as described in the registered PDD. The project boundary diagram is as follows;



No events or situations happened during the reported monitoring period which can alter the applicability of the applied methodology.

B.2. Post registration changes

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

There is no request for deviation applied during this monitoring period.

B.2.2. Corrections

There have not been any corrections to project information or parameters fixed at validation during the current monitoring period.

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

There has not been any change in the monitoring plan during the current monitoring period.

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

There has not been any change in the PDD during the current monitoring period.

B.2.5. Changes to start date of crediting period

The start date of crediting period has been revised as per the below details,

Start date of crediting period (old): 15/11/2012

Start date of crediting period (**new**): 01/01/2013

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

Not Applicable.

SECTION C. Description of monitoring system

The monitoring of the project activity as per AMS I.D. version 17 requires monitoring of electricity supplied to the grid in order to calculate emission reduction being achieved.

The WTGs are located in the same district of Tamil Nadu. TNEB is the sole authority for whole state electricity grid operations (Transmission, Distribution, Metering, Meter calibrations, Issuance of Generation Certificate etc). Also the operation and maintenance entity for both the investors is same (i.e. Suzlon Infrastructure Services Ltd.), Hence, the monitoring plan for both the investors will be identical.

Metering Procedure:

The monitored parameters would be measured through the dedicated TNEB energy meter (electronic trivector main meter which measures both export & import concurrently) connected to the WTG in the High Tension (HT) yard located besides the each WTGs. For billing purpose, the meter readings shall be measured on monthly basis jointly by the representative of TNEB, Project Participant and shift in charge. The TNEB personnel have a regular monthly schedule for recording the readings from the main meter and the readings will be jointly certified. For billing, TNEB issues the monthly statement showing the energy generated through WTG i.e. TNEB's monthly generation report to the project promoter; this statement will be maintained at the project participant's end for the entire crediting period plus two years. For the purpose of emission reduction calculation the net electricity generation reported in the TNEB's monthly generation report shall be considered.

The table below provides connection details of the WTGs in the project activity. HTSC no. is the connection no of respective HT Yard of Each WTG in Tamil Nadu.

Owner	Location No.	HTSC No.	State
Mangalam Fashions Ltd (1.5 MW)	SF. No. 580(P)	U2006	Tamil Nadu
Woodside Fashions Ltd (1.5 MW)	SF. No. 623/A1(P)	U2005	

QA-QC Procedure:

The energy meter (E.B meter) will be calibrated once in a year utilizing a standard meter by TNEB (portable meter owned by TNEB) or using NABL accredited laboratory or at any accredited laboratory. The main meter and check meter is jointly inspected and sealed on behalf of the Parties (TNEB & Project Participant).

If during the meter annual calibration, both the Main and Check Meter are found within the permissible limit of error i.e. 0.2%, the energy computation will be as per the Main Meter. The reading will be taken by the main meters alone for the purpose of metering electricity supplied to the grid as long as the error in the main meters is within the permissible limits.

If the main meter is found to be within the permissible limit of error and the corresponding check meter is beyond the permissible limits, then the meter reading will be as per the main meter as usual. The check meter shall, however, be calibrated immediately.

If the main meter is found to be beyond permissible limits of error, but the corresponding check meter is found to be within permissible of error, then the meter reading for the month up to the date and time of such test shall be as per the check meter. The main meter shall be calibrated immediately and meter reading for the period thereafter till the next monthly meter reading shall be as per the calibrated main meter.

In case both the main meters and the corresponding check meters are found to be beyond the permissible limits of error, then both the meters shall be immediately calibrated and the correction applied to the reading registered by the main meter to arrive the correct reading of energy supplied for metering electricity supplied to the grid for the period from the last month's meter reading up to the current test. Meter reading for the period thereafter till the next monthly reading shall be as per the calibrated main meter.

If during any of the monthly meter readings, the variation between the main meter and the check meter is more than the permissible limit for meters of 0.2% accuracy class; all the meters shall be re-tested and calibrated immediately.

Emergency Preparedness:

The energy meters (main meter & check meter) used in this project activity will be of 0.2s accuracy class and will be calibrated once in a year. In case of main meter failure the reading will be considered from the check meter and if both the main meter & the check meter are found non

operational then, no emission reduction would be claimed by the project activity. The project promoters have contracted the technology supplier for providing O&M services for the power project. The service provider would be responsible for maintenance of the necessary spare parts and consumables for the maintenance of the WTGs such as anemometers, wind vanes and sensors, oil filters, batteries, auxiliary motors and pumps, WTG controllers, slip rings, limit switches and sensors, detergents & solvents etc. The service provider would also be responsible for supply of necessary main components of the WTG such as main gearboxes, blades, generators, towers, hubs, main shafts & bearings, ground and top controller and hydraulic systems. Additionally, spare meters would also be kept available at the site for replacement in case of failure of any of the monitoring equipments.

Data archiving:

A monthly electricity generation report (statement showing the energy generated through wind mill for every month) is prepared by TNEB and issued to the project promoter for their records. This monthly electricity generation report will be maintained by the project promoter for the entire crediting period plus two years.

Roles and Responsibility:

The Project proponent's roles and responsibilities include the following:

- Monitoring the functioning of the metering arrangements and getting them calibrated once every year so that the accuracy and reliability levels are maintained.
- Periodic verifications and onsite inspections to ensure the quality of the data daily collected by the team and initiate steps in case of any abnormal conditions.
- Ensure monthly recording of the generation particulars by the TNEB authorities.
- Obtaining and archiving the generation certificates from the TNEB properly for aggregation at the required intervals.

Operation and Management Structure:

Director: In the project management structure Director is responsible for the project management. He is responsible to plan and allocate the annual budget for operation, estimation of the likely operating cost, organizing third party contractors, overview energy meter readings with Electricity bill from TNEB etc.

Accounts Manager: Accounts Manager would assist the Director for completing the task discussed above. He is responsible for collecting the data of the electricity generations at the individual wind turbine installations. He will crosscheck the log books regularly and report to Director for any abnormality.

Site In charge: Site In charge would be responsible for the collection reporting and archiving the data in the electronic form.

SECTION D. Data and parameters

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

Data / Parameter:	EF_{grid,OM,y}
Unit:	tCO ₂ /MWh
Description:	Operating Margin Emission Factor for Southern Grid
Source of data:	Central Electricity Authority, India Database version 6 published in March 2011
Value(s) applied:	0.9671

Purpose of data:	Calculation of baseline emissions or baseline net GHG removals by sinks
Additional comment:	It is fixed ex-ante

Data / Parameter:	EF_{grid,BM,y}
Unit:	tCO ₂ /MWh
Description:	Build Margin Emission Factor for Southern Grid
Source of data:	Central Electricity Authority, India Database version 6 published in March 2011
Value(s) applied:	0.7634
Purpose of data:	Calculation of baseline emissions or baseline net GHG removals by sinks
Additional comment:	It is fixed ex-ante

Data / Parameter:	EF_{grid,CM,y}
Unit:	tCO ₂ /MWh
Description:	Combined Margin Emission Factor for Southern Grid
Source of data:	Central Electricity Authority, India Database version 6 published in March 2011 Calculated according to the latest version of "Tool to calculate the emission factor for an electricity system" (Version 02.2.1). According to the Step 6 of the Baseline Methodology Procedure given in the "Tool to calculate the emission factor for an electricity system" (Version 02.2.1), the Combined Margin is calculated using the equation: $EF_{grid,CM,y} = EF_{grid,OM,y} \times W_{OM} + EF_{grid,BM,y} \times W_{BM}$
Value(s) applied:	0.9161
Purpose of data:	Calculation of baseline emissions or baseline net GHG removals by sinks
Additional comment:	EF _{grid,CM,y} is fixed for the entire crediting period of 10 years

D.2. Data and parameters monitored

Data / Parameter:	EG_{BL,y}
Unit:	MWh
Description:	Quantity of net electricity supplied to the grid in year y
Measured/ Calculated / Default:	Calculated
Source of data:	Joint Meter Reading Report and Log book records maintained by the WTG supplier
Value(s) of monitored parameter:	9,608.739
Monitoring equipment:	A dedicated TNEB energy meter (electronic trivector main meter which measures both export & import concurrently) is connected to the WTG in the High Tension (HT) yard located besides each WTG.
Measuring/ Reading/ Recording frequency:	Continuous monitoring, hourly measurement and monthly recording.
Calculation method (if applicable):	<ul style="list-style-type: none"> The energy is metered by the TNEB at the high voltage side of the step up transformers installed at each high tension service connection (HTSC) point. Monthly joint meter reading is recorded by the authorised representatives of TNEB in presence of the representative of the project participant. EG_{BL,y} is the sum of measured values of net electricity supplied by each of the 2 WTGs to the grid, i.e., $EG_{BL,y} = EG_{Mangalam,BL,y} + EG_{Woodside,BL,y}$

QA/QC procedures:	All the TNEB energy meters will be of 0.2s accuracy class, as per the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, (Published in the Gazette of India, Extraordinary, Part III, section iv), and will be calibrated once in a year by the TNEB officials, as per the provisions of the PPA, signed between the PP and the TNEB. PP has not control whatsoever over the processes related to TNEB meters. The joint meter reading can be cross checked against the credit note on energy generation from the WTGs, issued monthly by the TNEB, as well as the reading from the LCS controller of WTGs owned by Mangalam Fashions Ltd and Woodside Fashions Ltd.
Purpose of data:	Calculation of baseline emissions or baseline net GHG removals by sinks
Additional comment:	The data will be maintained in paper as well as electronic form for the 2 years from the end of crediting period or date of last issuance, whichever is later.

Data / Parameter:	EG_{Mangalam,BL,y}
Unit:	MWh
Description:	Quantity of net electricity supplied to the grid by the WTG owned by Mangalam Fashions Ltd in year y
Measured/ Calculated / Default:	Measured and Calculated
Source of data:	Joint Meter Reading Report and Log book records maintained by the WTG supplier
Value(s) of monitored parameter:	4,679.524
Monitoring equipment:	A dedicated TNEB energy meter (electronic trivector main meter which measures both export & import concurrently) is connected to the WTG in the High Tension (HT) yard located besides each WTG.
Measuring/ Reading/ Recording frequency:	Continuous monitoring, hourly measurement and monthly recording.
Calculation method (if applicable):	The net electricity supplied by this WTG to the grid will be the difference between the measured quantities of the grid electricity export and the import. Values of "export" and "import" would be measured through the dedicated TNEB energy meter (electronic trivector main meter which measures both export & import concurrently) connected to the WTG in the High Tension (HT) yard located besides the each WTGs. For billing purpose, the meter readings shall be measured on monthly basis jointly by the representative of TNEB and the Project Participant.
QA/QC procedures:	All the energy meters will be of 0.2s accuracy class, as per the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, (Published in the Gazette of India, Extraordinary, Part III, section iv), and will be calibrated once in a year by the TNEB officials, as per the provisions of the PPA, signed between the PP and the TNEB. PP has not control whatsoever over the processes related to TNEB meters. The joint meter reading can be cross checked against the credit note on energy generation from the WTGs, issued monthly by the TNEB, as well as the reading from the LCS controller of the WTG owned by Mangalam Fashions Ltd.
Purpose of data:	Calculation of baseline emissions or baseline net GHG removals by sinks
Additional comment:	The data will be maintained in paper as well as electronic form for the 2 years from the end of crediting period or date of last issuance, whichever is later.

Data / Parameter:	EG_{Mangalam,Export,y}
Unit:	MWh
Description:	Electricity Export to the Grid by the WTG owned by Mangalam Fashions Ltd during the year y.

Measured/ Calculated / Default:	Measured
Source of data:	Joint Meter Reading Report and Log book records maintained by the WTG supplier
Value(s) of monitored parameter:	4,733.019
Monitoring equipment:	A dedicated TNEB energy meter (electronic trivector main meter which measures both export & import concurrently) is connected to the WTG in the High Tension (HT) yard located besides each WTG.
Measuring/ Reading/ Recording frequency:	Continuous monitoring, hourly measurement and monthly recording.
Calculation method (if applicable):	The total energy exported to the grid by this WTG is measured by TNEB energy meter (electronic trivector main meter which measures both export & import concurrently) connected to the WTG in the High Tension (HT) yard located besides the each WTGs. For billing purpose, the meter readings shall be measured on monthly basis jointly by the representative of TNEB and the Project Participant and the PP has no control over the process. On the basis of this reading, Quantity of net electricity supplied to the grid shall be calculated and the statement shall be issued to Project Participant.
QA/QC procedures:	All the energy meters will be of 0.2s accuracy class, as per the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, (Published in the Gazette of India, Extraordinary, Part III, section iv), and will be calibrated once in a year by the TNEB officials, as per the provisions of the PPA, signed between the PP and the TNEB. PP has not control whatsoever over the processes related to TNEB meters. The joint meter reading can be cross checked against the credit note on energy generation from the WTGs, issued monthly by the TNEB, as well as the reading from the LCS controller of the WTG owned by Mangalam Fashions Ltd.
Purpose of data:	Calculation of baseline emissions or baseline net GHG removals by sinks
Additional comment:	The data will be maintained in paper as well as electronic form for the 2 years from the end of crediting period or date of last issuance, whichever is later.

Data / Parameter:	EG_{Mangalam,Import,y}
Unit:	MWh
Description:	Electricity Imported from the Grid by the WTG owned by Mangalam Fashions Ltd during the year y.
Measured/ Calculated / Default:	Measured
Source of data:	Joint Meter Reading Report and Log book records maintained by the WTG supplier
Value(s) of monitored parameter:	53.495
Monitoring equipment:	A dedicated TNEB energy meter (electronic trivector main meter which measures both export & import concurrently) is connected to the WTG in the High Tension (HT) yard located besides each WTG.
Measuring/ Reading/ Recording frequency:	Continuous monitoring, hourly measurement and monthly recording.

Calculation method (if applicable):	The total energy imported from the grid by this WTG is measured by TNEB energy meter (electronic trivector main meter which measures both export & import concurrently) connected to the WTGs in the High Tension (HT) yard located besides the each WTGs. For billing purpose, the meter readings shall be measured on monthly basis jointly by the representative of TNEB and the Project Participant and the PP has no control over the process. On the basis of this reading, Quantity of net electricity supplied to the grid shall be calculated and the statement shall be issued to Project Participant.
QA/QC procedures:	All the energy meters will be of 0.2s accuracy class, as per the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, (Published in the Gazette of India, Extraordinary, Part III, section iv), and will be calibrated once in a year by the TNEB officials, as per the provisions of the PPA, signed between the PP and the TNEB. PP has not control whatsoever over the processes related to TNEB meters. The joint meter reading can be cross checked against the credit note on energy generation from the WTGs, issued monthly by the TNEB.
Purpose of data:	Calculation of baseline emissions or baseline net GHG removals by sinks
Additional comment:	The data will be maintained in paper as well as electronic form for the 2 years from the end of crediting period or date of last issuance, whichever is later.

Data / Parameter:	EG_{Woodside,BL,y}
Unit:	MWh
Description:	Quantity of net electricity supplied to the grid by the WTG owned by Woodside Fashions Ltd in year y
Measured/ Calculated / Default:	Measured and Calculated
Source of data:	Joint Meter Reading Report and Log book records maintained by the WTG supplier
Value(s) of monitored parameter:	4,929.215
Monitoring equipment:	A dedicated TNEB energy meter (electronic trivector main meter which measures both export & import concurrently) is connected to the WTG in the High Tension (HT) yard located besides each WTG.
Measuring/ Reading/ Recording frequency:	Continuous monitoring, hourly measurement and monthly recording.
Calculation method (if applicable):	The net electricity supplied by this WTG to the grid will be the difference between the measured quantities of the grid electricity export and the import. Values of "export" and "import" would be measured through the dedicated TNEB energy meter (electronic trivector main meter which measures both export & import concurrently) connected to the WTG in the High Tension (HT) yard located besides the each WTGs. For billing purpose, the meter readings shall be measured on monthly basis jointly by the representative of TNEB and the Project Participant
QA/QC procedures:	All the energy meters will be of 0.2s accuracy class, as per the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, (Published in the Gazette of India, Extraordinary, Part III, section iv), and will be calibrated once in a year by the TNEB officials, as per the provisions of the PPA, signed between the PP and the TNEB. PP has not control whatsoever over the processes related to TNEB meters. The joint meter reading can be cross checked against the credit note on energy generation from the WTGs, issued monthly by the TNEB, as well as the reading from the LCS controller of the WTG owned by Woodside Fashions Ltd.
Purpose of data:	Calculation of baseline emissions or baseline net GHG removals by sinks
Additional comment:	The data will be maintained in paper as well as electronic form for the 2 years from the end of crediting period or date of last issuance, whichever is later.

Data / Parameter:	EG_{Woodside, Export,y}
Unit:	MWh
Description:	Electricity Export to the Grid by the WTG owned by Woodside Fashions Ltd during the year y.
Measured/ Calculated / Default:	Measured
Source of data:	Joint Meter Reading Report and Log book records maintained by the WTG supplier
Value(s) of monitored parameter:	4,980.748
Monitoring equipment:	A dedicated TNEB energy meter (electronic trivector main meter which measures both export & import concurrently) is connected to the WTG in the High Tension (HT) yard located besides each WTG.
Measuring/ Reading/ Recording frequency:	Continuous monitoring, hourly measurement and monthly recording.
Calculation method (if applicable):	The total energy exported to the grid by this WTG is measured by TNEB energy meter (electronic trivector main meter which measures both export & import concurrently) connected to the WTG in the High Tension (HT) yard located besides the each WTGs. For billing purpose, the meter readings shall be measured on monthly basis jointly by the representative of TNEB and the Project Participant and the PP has no control over the process. On the basis of this reading, Quantity of net electricity supplied to the grid shall be calculated and the statement shall be issued to Project Participant.
QA/QC procedures:	All the energy meters will be of 0.2s accuracy class, as per the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, (Published in the Gazette of India, Extraordinary, Part III, section iv), and will be calibrated once in a year by the TNEB officials, as per the provisions of the PPA, signed between the PP and the TNEB. PP has not control whatsoever over the processes related to TNEB meters. The joint meter reading can be cross checked against the credit note on energy generation from the WTGs, issued monthly by the TNEB, as well as the reading from the LCS controller of the WTG owned by Woodside Fashions Ltd.
Purpose of data:	Calculation of baseline emissions or baseline net GHG removals by sinks
Additional comment:	The data will be maintained in paper as well as electronic form for the 2 years from the end of crediting period or date of last issuance, whichever is later.

Data / Parameter:	EG_{Woodside,Import,y}
Unit:	MWh
Description:	Electricity Imported from the Grid by the WTG owned by Woodside Fashions Ltd during the year y.
Measured/ Calculated / Default:	Measured
Source of data:	Joint Meter Reading Report and Log book records maintained by the WTG supplier
Value(s) of monitored parameter:	51.533
Monitoring equipment:	A dedicated TNEB energy meter (electronic trivector main meter which measures both export & import concurrently) is connected to the WTG in the High Tension (HT) yard located besides each WTG.
Measuring/ Reading/ Recording frequency:	Continuous monitoring, hourly measurement and monthly recording.

Calculation method (if applicable):	The total energy imported from the grid by this WTG is measured by TNEB energy meter (electronic trivector main meter which measures both export & import concurrently) connected to the WTGs in the High Tension (HT) yard located besides the each WTGs. For billing purpose, the meter readings shall be measured on monthly basis jointly by the representative of TNEB and the Project Participant and the PP has no control over the process. On the basis of this reading, Quantity of net electricity supplied to the grid shall be calculated and the statement shall be issued to Project Participant.
QA/QC procedures:	All the energy meters will be of 0.2s accuracy class, as per the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, (Published in the Gazette of India, Extraordinary, Part III, section iv), and will be calibrated once in a year by the TNEB officials, as per the provisions of the PPA, signed between the PP and the TNEB. PP has not control whatsoever over the processes related to TNEB meters. The joint meter reading can be cross checked against the credit note on energy generation from the WTGs, issued monthly by the TNEB.
Purpose of data:	Calculation of baseline emissions or baseline net GHG removals by sinks
Additional comment:	The data will be maintained in paper as well as electronic form for the 2 years from the end of crediting period or date of last issuance, whichever is later.

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 approved methodology AMS I.D version 17 baseline emissions for the project activity are calculated by multiplying the net quantity of electricity supplied by this project activity ($EG_{BL,y}$) with the CO_2 baseline emission factor for the electricity displaced due to the project ($EF_{CO_2,grid,y}$) as follows:

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

Where,

$EF_{CO_2,grid,y}$	=	CO_2 emission factor of the grid in year y (t CO_2 /MWh)
	=	0.9161 t CO_2 /MWh
$EG_{BL,y}$	=	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in the year y (MWh)
	=	9,608.739 MWh
BE_y	=	9,608.739 x 0.9161 t CO_2
BE_y	=	8,802 tCO_2

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

Since the project activity is a renewable energy project which generates electricity using wind power therefore there are no resulting project emissions.

E.3. Calculation of leakage

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

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	8,802	0	0	8,802

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)	11,884	8,802

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

From E.5 above, we can observe that actual emission reduction for the monitoring is lower than estimated emission reductions by 25.68%.

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 CO ₂ e)	0	8,802

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	Mangalam Fashions Limited
Street/P.O. Box	22
Building	Camac Street
City	Kolkata
State/Region	West Bengal
Postcode	700 016
Country	India
Telephone	+91 33 22837495/6
Fax	+91 33 22837497
E-mail	bachhawatcal@gmail.com
Website	
Contact person	
Title	Authorized Signatory
Salutation	Mr.
Last name	Bachhawat
Middle name	
First name	Deepak
Department	NA
Mobile	+91 9831108988
Direct fax	+91 33 22837497
Direct tel.	+91 33 22837495/6
Personal e-mail	bachhawatcal@gmail.com

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	Woodside Fashions Ltd
Street/P.O. Box	22
Building	Camac Street
City	Kolkata
State/Region	West Bengal
Postcode	700 016
Country	India
Telephone	+91 33 22837495/6
Fax	+91 33 22837497
E-mail	bachhawatcal@gmail.com
Website	
Contact person	
Title	Authorized Signatory
Salutation	Mr.
Last name	Bachhawat

Middle name	
First name	Deepak
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Mobile	+91 9831108988
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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
04.0	25 June 2014	Revisions to: <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		