MONITORING REPORT FORM (CDM-MR)
Version 01 - in effect as of: 25/06/2010

CONTENTS

MONITORING REPORT
Version.02 and date 13/08/2010

"BUNDLED WIND POWER PROJECT IN TAMILNADU, INDIA CO-ORDINATED BY THE TAMILNADU SPINNING MILLS ASSOCIATION (TASMA)"
Reference number: 0991
Monitoring Period Number: 08 and dates (first and last days included (01/07/2009 - 31/03/2010)

SECTION A. General description of the project activity

A.1. Brief description of the project activity: >>

>>

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

The Project Activity is a bundle of Investments into WTGs by the Members of TASMA in Tamil Nadu, India, co-ordinated by Tamil Nadu Spinning Mills Association (referred as TASMA). The intent of the Project Activity is to reduce GHG emission and promote sustainable development by use of renewable energy (Wind) for generation of power by bringing together a number of investors with small power requirements to invest into wind turbines.

Brief description of the installed technology and equipments

The project activity has employed Horizontal Axis WTGs of different capacities. All the WTGs deployed in the project activity are from well-known international manufacturers.
Amount if wind turbines installed: 704
Total installed capacity: 468 MW
Approximate annual power output: 860 GWh

Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.)

All the windmill sub-systems have been constructed and commissioned with different dates and are all under continuous operation now.

Total emission reductions achieved in this monitoring period

The total ERs achieved in this monitoring period of 1st July 2009 till 31st March 2010 are tabulated as follows:

Year	Net Export (KWh)	EF (tCO_2/MWh)	CERs
July 2009 to March 2010	**741 318 418**	**0.932**	**690 908**

A.2. Project Participants

>>

The Tamilnadu Spinning Mills Association (TASMA) is the Primary Project Sponsor. The members of the Association are the owners of the wind turbines that are bundled in this project activity. TASMA has entered into an agreement with Carbon Asset Services Sweden AB, and this entity is also a project participant. Further, Carbon Asset Management Sweden AB has been added as project participant. The

respective parties i.e. the Government of India and the Government of Sweden and Switzerland have approved the project.

A.3. Location of the project activity:

>>

The project sites are located at Udumalpet, Sencottah, Aralvaimozhi in the districts of Coimbatore, Tirunelveli and Kanyakumari in the Indian State of Tamil Nadu. All the projects are connected to the southern grid of India. The GPS coordinates are as follows:
Udumalpet, Coimbatore: from 10 34´7´´S to 10 35´6´´S and from 77 17´39´´E to 77 18´19´´E
Ayakudi (Sencottah), Tirunelveli: from 8 55´42´´S to 8 56´45´´S and from 76 40´5´´E to 76 41´7´´E
Aralvaimozhi, Kanyakumar: from 8 14´9´´S to 8 15´5´´S and from 77 31´39´´E to 77 32´19´´E

A.4. Technical description of the project

>>

The WTGs are installed in major locations at Udumalpet, Ayakudi and Aralvaimozhi in the districts of Coimbatore, Tirunelveli and Kanyakumari. These sites in these locations have been selected through the micro-siting studies and data analyses on wind availability, speed of wind, minimum speed etc. All WTGs belonging to the project activities are connected to the same grid namely TNEB, which is part of the southern grid of India.

The project activity has employed Horizontal Axis WTGs of different capacities. All the WTGs deployed in the project activity are from well-known international manufacturers. All these WTGs are type tested and approved by the Ministry of Non-Conventional Energy Sources (MNES), Government of India. The turbines generate power at 400 volts, which is stepped up to 33 KVA by the local transformers. The HT transmissions are connected to service 110 KVA substations provided by TNEB.

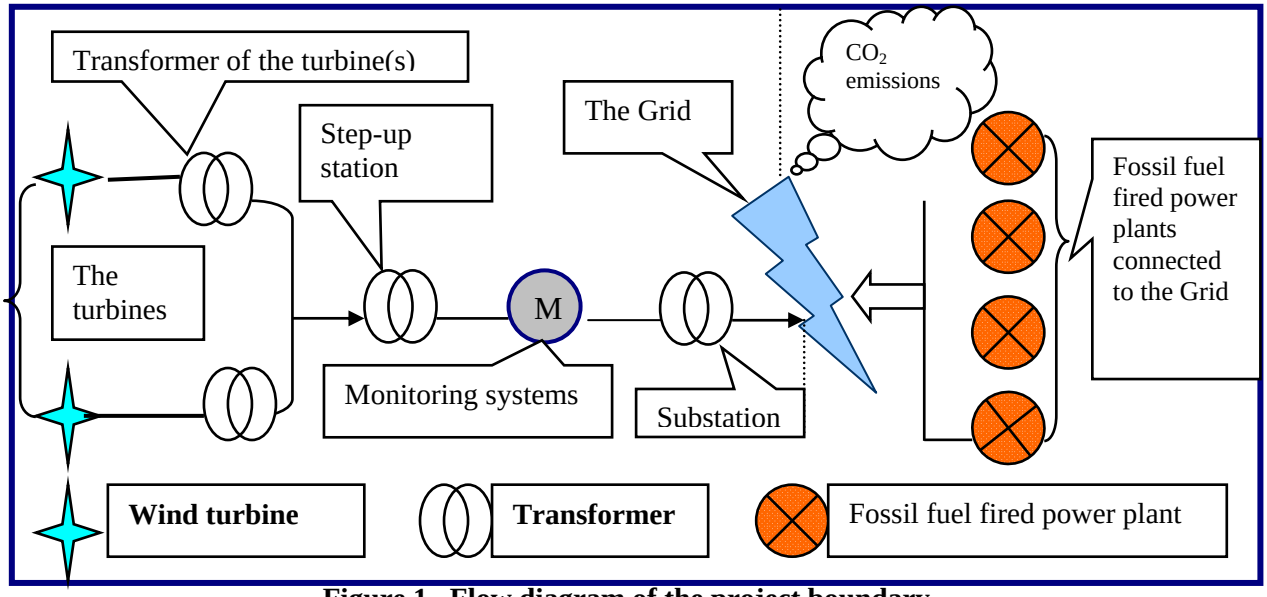


Figure 1. Flow diagram of the project boundary

A.5. Title, reference and version of the baseline and monitoring methodology applied to the project activity:

>>

Title: Consolidated Baseline and Monitoring Methodology for grid connected electricity generation from renewable sources
Reference: ACM0002; Version-6

A.6. Registration date of the project activity:

>>
10th June 2007

A.7. Crediting period of the project activity and related information (start date and choice of crediting period):

>>
The PP has opted for a fixed crediting period of 10 years starting from 01/01/2003.

A.8. Name of responsible person(s)/entity(ies):

>>

Tamilnadu Spinning Mills Association & Carbon Asset Services, Sweden AB. Contact information as per PDD, Annex 1.

SECTION B. Implementation of the project activity

B.1. Implementation status of the project activity

>>

The starting date of operation of the project activity
All the 704 windmills subsystems have come into operation between 2003 and 2006, the project activity has already been implemented and got issuance of CERs till June 2009.

The information regarding the actual operation of the project activity during this monitoring period
No specific events happened.

A brief description of: (i) events or situations that occurred during the monitoring period, which may impact the applicability of the methodology, and (ii) how the issues resulting from these events or situations are being addressed
No specific events happened.

B.2. Revision of the monitoring plan

>>

A monitoring plan revision regarding the meter accuracy and calibration frequency was approved in July 2008.

B.3. Request for deviation applied to this monitoring period

>>

Not Applicable

B.4. Notification or request of approval of changes

>>

Not Applicable

SECTION C. Description of the monitoring system

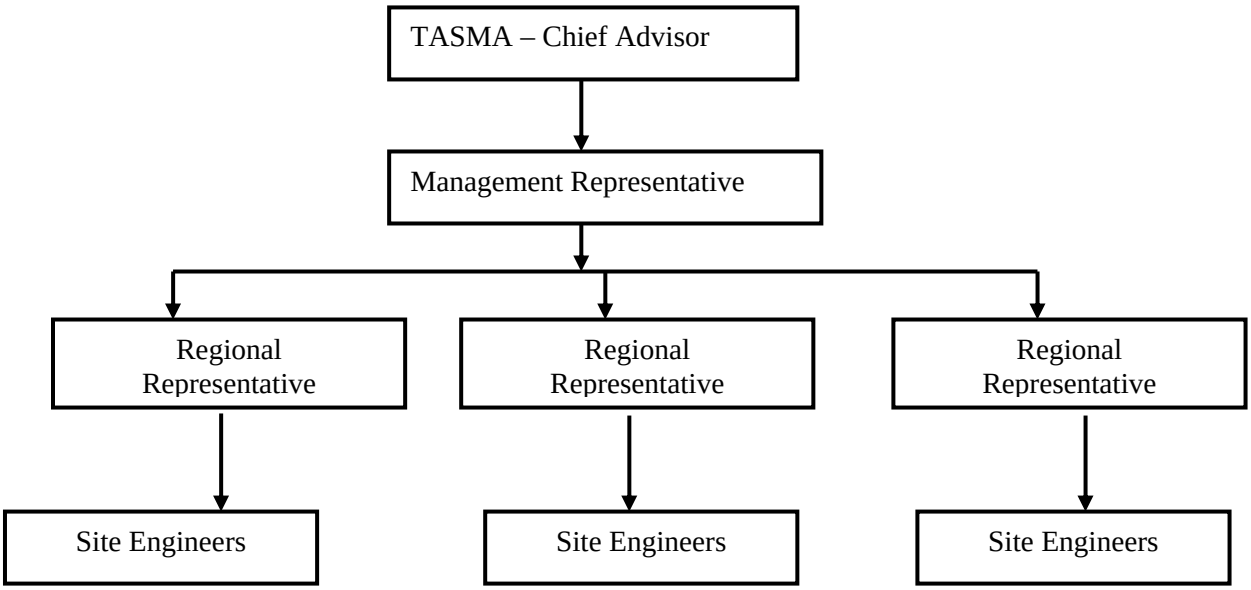
>>

This project activity uses renewable energy that is wind, as source for power generation. No other fossil/non fossil fuels are involved and no fuel preparation or combustion takes place. Therefore, the net electricity generated by the project activity is the only parameter that needs to be monitored. The officially authenticated energy meter readings (continuous metering, monthly readings, in line with the monitoring plan) are noted by the TNEB authority on a monthly basis by way of TNEB statements/meter cards. The corresponding TNEB statements or meter cards will therefore testify the actual number of units exported to the grid and hence form the basis of Emission Reductions.

Structuring For Monitoring:

1. The following organization is in place for facilitating monitoring:

The Chief Adviso is responsible for the overall management.
The management representative oversees the coordination between all regional representatives.
The regional representatives are responsible for the timely collection of all meter records.
The site engineers are responsible for the preparation of all records and the interaction with TNEB engineers.



2. Identification of WTGs:

Each WTG which is part of the project activity is uniquely identified. The ID number has the following structure:

Company ID+ WTG ID

3. Records Maintained

- Minutes of Periodic Review Meetings
- Monthly Generation data
- Meter wise Calibration certificate / Test report provided by TNEB
- Records on Environmental Care activities

See Figure 1 for the diagram detailing the monitoring regime.

SECTION D. Data and parameters

D.1. Data and parameters determined at registration and not monitored during the monitoring period, including default values and factors	
(Copy this table for each data and parameter. To report multiple values, a table may be used)	
Data / Parameter:	**EF_y**
Data unit:	**tCO_2e/MWh**
Description:	CO_2 emission factor for southern grid of India
Source of data used:	Based on ACM0002, EFy is calculated as the weighted average of OM Emission factor and BM emission factor.
Value(s) :	0.932
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Baseline emission calculations
Additional comment:	NA

D.2. Data and parameters monitored	
(Copy this table for each data and parameter. To report multiple values, a table may be used)	
Data / Parameter:	**EGy**
Data unit:	**MWh**
Description:	Net Electricity supplied to the southern grid of India by the project activity
Measured /Calculated /Default:	Measured
Source of data:	Actual Measurement by TNEB Meter
Value(s) of monitored parameter:	**741,318.418**
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	The data is used for Baseline Calculations
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	Measured by 0.5S Class Meter – (accuracy ±0.5%) Certified by TNEB Statement Calibration done at least once in 5 years All calibration records are intact The exact information for every of the 704 wind turbines is provided in a separate excel file.
Measuring/ Reading/ Recording frequency:	Continuous metering Monthly Reading by TNEB
Calculation method (if applicable):	Power export – power import
QA/QC procedures applied:	QA/QC of Monitoring Equipment as per TNEB's standards Calibration procedure: Electricity meter is calibrated by TNEB at least once in 5 years with a calibration report kept by the project owner.

SECTION E. Emission reductions calculation

E.1. Baseline emissions calculation

>>

According to the methodology outlined in ACM0002 (Version 06), Baseline emissions (*BEy* in tCO2) due to displacement of grid-electricity are the product of the Baseline Emissions Factor (*EF,y* in tCO2/MWh), times the electricity exported by the TASMA project activity to the grid (*EGy* in MWh).

$$BEy = EGy \,.\, EFy$$
$$=741,318.418 * 0.932 = 690,908.tCO2$$

E.2. Project emissions calculation

>>

Not applicable

E.3. Leakage calculation

>>

Not applicable

E.4. Emission reductions calculation / table

>>

As there are no project emissions and leakage in this case, Baseline emissions are equivalent to the emission reductions.

Total baseline emissions: **690 908**
Total project emissions: **0**
Total leakage: **0**
Total emission reductions: **690 908**

E.5. Comparison of actual emission reductions with estimates in the CDM-PDD

>>

This section shall include a comparison of actual values of the emission reductions achieved during the monitoring period with the estimations in the registered CDM-PDD.

Item	Values applied in ex-ante calculation of the registered CDM-PDD	Actual values reached during the monitoring period
Emission reductions (tCO_2e)	**Estimated Average for 9 months is 601,689tCO_2**	**690,909 tCO_2 for 9 months**

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

>>

The reason for higher generation is due to wind pattern, which is a natural force and may vary from time to time. This cannot be predictable at any point i.e. at time of validation. A comparative chart is

provided below which shows the generation details from the years 2005 to 2010 taken for the same period namely July-March:

Comparative Analysis					
Sl. No.	**Period**	**Generation in Kwh(Net Export)July to March**	**No of WTGs**	**Capacity in MW**	**Average Generation per MW in Kwh**
1	July 05 to March 06	664629927	704	467.79	1420.78695
2	July 06 to March 07	720066454	704	467.79	1539.29424
3	July 07 to March 08	705233480	704	467.79	1507.58563
4	July 08 to March 09	643108536	704	467.79	1374.78043
5	July 09 to March 10	741318418	704	467.79	1584.72481

From the above, it could be seen that due to the wind pattern, the generation is getting influenced either with higher generation or with lower generation, depending upon the wind flow of that period. However, there is no much variation when compared to the previous periods. If it is compared with last monitoring report, due to the fact that the period in the last MR relates to low wind period, it is felt that as if there was abnormal variation in generation. Hence, we have taken the exact periods in each year and accordingly, comparison is made as shown above.

- - - - -

History of the document

Version	Date	Nature of revision
01	EB 54, Annex 34 28 May 2010	Initial adoption.
Decision Class: Regulatory **Document Type**: Guideline, Form **Business Function**: Issuance		