

Revision in Monitoring Plan of Registered PDD for “25.70 MW Bundled Wind Power Project in Udumalpet, Tamilnadu”

Title of the project activity:	25.70 MW Bundled Wind Power Project in Udumalpet, Tamilnadu
UNFCCC Reference Number:	1015
PDD Version number:	02
PDD Date:	15 February 2007
Title and reference of the approved baseline and monitoring methodology	“Consolidated baseline methodology for grid connected electricity generation from renewable sources” ACM0002/Version 06/Sectoral Scope 1 (19 May 2006)

B.7 Application of the monitoring methodology and description of the monitoring plan:

B.7.1 Data and parameters monitored:

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Data / Parameter:	EG _v
Data unit:	MWh
Description:	Net Electricity supplied to the grid by the project
Source of data to be used:	www.power2customer.com – Monthly Electricity Generation Reports Statement issued by Tamil Nadu Electricity Board
Value of data applied for the purpose of calculating expected emission reductions in section B.5	47,300 Units
Description of measurement methods and procedures to be applied:	Net Electricity measured is used in calculation of emission reductions. - The electricity exported to the grid and the electricity imported from the grid generated by each WTG is measured at the energy meter installed at the transformer yard local control system (LCS reading) which can be cross verified from the local control system (LCS reading) Energy meter installed at the transformer yard. - The data is measured instantaneously with Generation and recorded monthly - 100% of the data is monitored - The data is archived electronically
QA/QC procedures to be applied:	As per NEG Micon’s IQMS (Integrated Quality Management System), the generation reports of the WTG are observed instantaneously and uploaded on a daily basis and the data is archived as daily, weekly, monthly and yearly generation reports in the electronic database of the organisation – www.power2customer.com . The generation details so archived will be kept for two years beyond the crediting period. The energy meter will be tested and calibrated periodically by TNEB as per the guidelines of TNERC.
Any comment:	Net Electricity is supplied by the project to the grid. It is verified by the receipt of sales.

B.7.2 Description of the monitoring plan:
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As per Approved Consolidated Baseline Methodology for ~~zero-emissions~~ grid connected renewable electricity generation projects (ACM0002), leakage calculation is not required for electricity generation from wind. The project activity essentially involves generation of electricity from wind, the employed WEG only converts wind energy into electrical energy and does not use any other input fuel for electricity generation. Thus no special ways and means are required to monitor leakage from the project activity.

The primary monitoring of the electricity fed to the state utility grid will be carried out jointly at the incoming feeder of the state power utility (TNEB). Machines for sale to utility/captive will be connected to the feeder and the joint measurement will be carried out once in a month in presence of both parties (the developer's representative and officials of the state power utility). Both parties will sign the recorded reading.

The secondary monitoring, which will provide a backup (fail-safe measure) in case the primary monitoring is not carried out, would be done at the individual WEGs. Each WEG is equipped with an LCS wherein the generation details are recorded, in case of failure of primary monitoring; generation of individual machine can be cross verified from an LCS reading. The same is archived daily in the customer database in the website www.power2customer.com. A more detailed procedure on monitoring and metering is specified in Annex 4.

Annex 4

MONITORING PLAN

In addition to the Monitoring Plan listed below, there is local control system (LCS) ~~NEG Micon also has an Integrated Quality Management System~~ which will be used to verify all data that has been collected. NEG Micon (I) Private Limited (now renamed as Vestas Wind Technology India Private Limited) is the first wind manufacturing company to have this system. Data is continuously updated on a daily basis and an internal survey conducted in the last few months has indicated that there has been minimum or no error in the readings. The use of ~~IQMS~~ LCS would greatly benefit the Monitoring Plan for this Project especially with regard to reliability and consistency.

Metering

The energy that is generated will be metered at the Project site. ~~The Project has a two metering system, in which the main meter is owned by the project developer and the secondary meter is owned by the Tamil Nadu Electricity Board.~~ The metering equipment at both points is maintained according to strict standards laid down by the Tamil Nadu Electricity Board.

In keeping with the standards and regulations laid down by the Tamil Nadu Electricity Regulatory Commission, all points regarding inspection, checking and meter reading is listed below.

- (a) Both kWh and kVARh flow are measured at interconnection points, and power transformer locations
- (b) Each metering point associated with determination of energy exported or imported is provided with ~~both main and check meter~~ energy meter or as per the agreement between the State Utility and the company
- (c) Minimum standards of accuracy of meter shall be of class ~~0.2~~ 0.5 ~~or~~ as stipulated by utility.
- (d) All current transformers and voltage transformers used in conjunction with Commercial (Tariff) metering conform to the relevant Indian Standards. These are of an accuracy class ~~0.2~~ 0.5 and of suitable rating to cater the meter and lead wire burden.
- (e) Voltage supply to the metering is assured with necessary voltage selection schemes. Loss of potential relays is provided which shall initiate alarms on loss of one or more phases of the voltage supply to any meter.
- (f) Meters are tested and calibrated by a neutral agency at least once in a year or such as mutually agreed between the utility and the entities according to the guidelines in the standards / supplier's recommendations. Records of meter calibration test are maintained for future reference.
- (g) A schedule is drawn up between the utility and the entities covering summation, collection, processing tariff meter readings at various connection sites.
- (h) The generating company furnishes recorded data of all electric measurements and events recorded by the operational metering to the utility at least once in a week or more often if required.
- (i) The utility is responsible to formulate the metering procedure and implement it. Hence all information metering data collected will be as accurate as possible and will be officially certified.

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Thus from the above it can be established that the monitoring plan that will be adhered will be of the highest quality and standard as by law generating companies are required to follow certain norms. NEG Micon (now known as Vestas Wind Technology India Private Limited) with the help of the IQMS will also ensure the same. All documents will be officially verified and certified on an annual basis for the purpose of monitoring.