

No.51/9/2007-WE
Ministry of New & Renewable Energy
(Wind & Biomass Division)

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Block No.14, CGO Complex,
Lodhi Road, New Delhi
Dated: 20.06.2008

Sub: Guidelines for Wind Measurement by Private Sector and subsequent development.

The Ministry of New and Renewable Energy (MNRE) has been carrying out a Wind Resource Assessment (WRA) Programme in the country through the Centre for Wind Energy Technology (C-WET), Chennai to identify the potential sites for setting up grid connected wind power projects. List of such potential sites is issued by C-WET from time to time. As of now, WRA programme is implemented in association with Nodal agencies for New & Renewable Energy programmes in concerned States. A number of State Nodal Agencies have come forward to supplement the WRA involving private sector. In view of this and to broad-base the WRA through independent private participation, the following guidelines are issued to ensure uniform wind measurements and subsequent development.

- (i) Procedure methodology, equipment, height of the mast (measurements at a minimum of 50 m level is compulsory), etc. to be followed should be standards adopted and accepted universally for all private developers, for carrying out wind resource assessment study on their own. The period of measurement should be adequate with minimum wind date for complete one year. Such standards shall be announced by C-WET and displayed on their web site.
- (ii) The extended area would be normally 10 km from the mast point to all directions for uniform terrain and limited to appropriate distance in complex terrain (mountainous and hilly) with regard to the complexity of the site.
- (iii) Private developers, who are desirous for collecting wind data at specific locations should inform the details of the site to C-WET, Chennai (Unit Chief, WRA Unit) through the concerned State Nodal

Agency. Such information will be registered by C-WET on a nominal payment of Rs.5000/- per site. In case, the companies want to outsource the activity through any other agency/body, they have to furnish necessary documents to establish the credentials of such agency/body, experience, expertise etc. C-WET's team may visit this site for verification during the period of measurement..

- (iv) The raw data as collected, in binary formats shall be submitted by the owner of the wind data and the same will be examined and certified by C-WET with reference to the details submitted by the owner of the wind monitoring station (Ref: **Annexure**) for its feasibility as per norms of MNRE under appropriate agreement between the private developers and C-WET.
- (v) Based on C-WET's recommendations concerned SNA will accord necessary clearances and NOC for setting up wind farm. It is also recommended that proper micro-siting should be carried out by private developers/investors while planning the wind power projects.
- (vi) The site would be listed by C-WET in a separate category on the basis of wind farmable site qualifying that the assessment is based on the data collected by private farms/developers with the following information: Site name, Village, District, and State & Name of the Owner/Company of wind monitoring station.
- (vii) A period of three years is considered sufficient for the manufacture/developer to establish a wind farm, once the NOC is issued for the site and it should be done within the period unless there are extenuating circumstances like non-availability of evacuation arrangements, forest clearances, that are beyond the control of the developer, in which case this could be extended but in any case for not more than 5 years in total, subject to the certification of such circumstances by the State Nodal Agencies . Thereafter, if there is no development at the site, even after 3/5 years, the site would be offered to any other developer by the concerned State Nodal Agency. The SNA would be at liberty to invite bids for setting up wind power projects in the such sites, where no development is taken up within prescribed period(s).
- (viii) It may so happen that the developers could get Government lands allotted or private lands purchased but do not take up the setting up of the farm at the site where the wind potential is established. In such cases, the State Governments would resume the lands so

allotted or acquire the land purchased by the developers at the same price at which the sale deeds were registered and offer the lands to other developers by inviting bids.

- (ix) After 3/5 years, when the site is declared open for others, all data of the site will be treated as part of C-WET knowledge bank and will be given in the normal list of potential stations by C-WET.
2. C-WET will charge a fee of Rs.2.0 lakh for each assignment. The amount will be deposited in full with C-WET along with submission of data for analysis by C-WET only after C-WET will take up validation of data (Ref. para (iv) above).
3. The same procedure would be adopted *mutatis-mutandis* for measuring off-shore wind data by private sector, subject to necessary clearances by relevant authorities. The fee to be charged by C-WET would be Rs.3 lakhs per site.

(J.R.Meshram)
Director

To

All State Nodal Agencies

Copy to:

- 1) President, IWTMA, Chennai
- 2) Vice-President, IWPA, Chennai

Verification of procedure of wind monitoring the following details may be furnished to Centre for Wind Energy Technology, Chennai.

1. SITE PLAN.

- a.** Photographs of the monitoring station from eight azimuth directions.
- b.** Survey of India map on which the exact location of the station is clearly marked (mention latitude & longitude).
- c.** Scaled site plan with immediate obstacles (<100m) clearly marked.
- d.** Give the location of nearest IITM or C-WET monitoring station vis-à-vis the station under consideration.

2. STATION INSTALLATION REPORT (Should be submitted within one month after installation of wind mast)

- a.** The report shall contain detailed description of the site.
- b.** Height of the mast, Height of sensors (anemometer, wind vane, temperature sensor).
- c.** Anemometer & Direction sensor mounting arrangements.
- d.** Model and Serial number of sensors and data-loggers.
- e.** Method ensured to set up direction sensor.
- f.** Date of installation and dismantling.

3. DETAILS OF INSTRUMENTATION

- a.** Manual readings are not acceptable
- b.** Fully automatic data loggers shall be used. The data loggers must collect time correlated time series data for wind speed and direction, extreme winds etc. Details of the instrumentation employed should be furnished.
- c.** All sensors used shall possess valid calibration certificates.
- d.** The calibration certificates shall be produced for verification within one month after the installation of the mast..

4. DATA COLLECTION, STORAGE AND PROCESSING

- a.** Data retrieval periodicity.
- b.** Methods used for data management and security.
- c.** Raw data files (Binary & ASCII) for verification. This shall be kept confidential.
- d.** Details of software used for storage and management of data
- e.** Details of software used for analysis.
- f.** Monthly report and yearly report of wind data with joint frequency distribution.