



# Renewable Energy Research Laboratory

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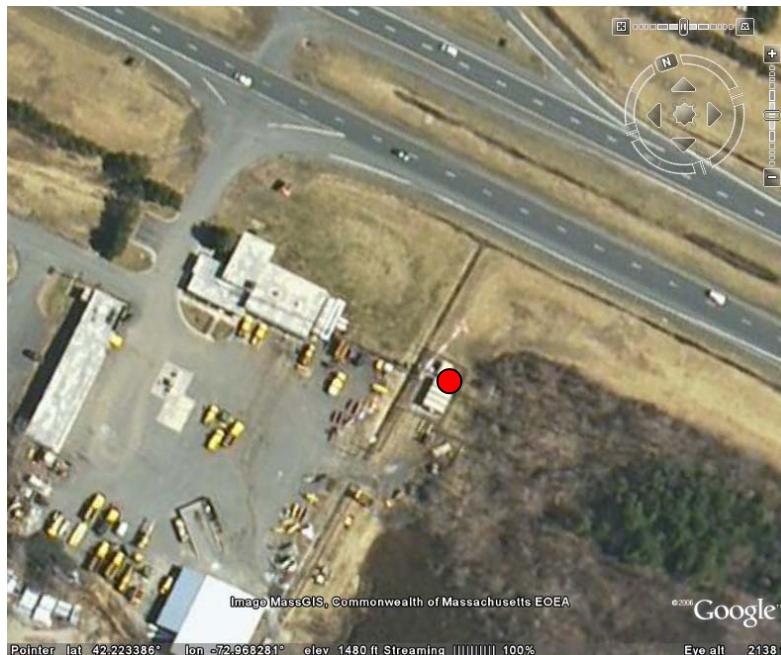
## Data Update for Blandford, MA December, 2008

Prepared for  
Massachusetts Technology Collaborative, 75 North Drive, Westborough, MA 01581  
By Nathan Mesick

### Monthly Data Summary for December, 2008

#### Site Description

This update summarizes the monthly data results for the Blandford monitoring site in Blandford, MA, at  $42.223^{\circ}$  N,  $72.968^{\circ}$  W (NAD 27). The site is located on the MTA tower in Blandford, MA. The picture below shows the location of the tower, with the red circle indicating the location of the tower base.



#### Tower and Sensors

Two anemometers and one wind vane are mounted at the two tower heights, 60 m (197 ft) and 40 m (131 ft). More information on the sensors and site can be found at [http://www.ceere.org/rerl/rerl\\_resourcedata.html](http://www.ceere.org/rerl/rerl_resourcedata.html).

### Data Summary Statistics

A summary of the data during the reporting period are included in the following table. The wind shear power law exponent is based on the mean wind speeds during the measurement period. For more information on wind shear and turbulence intensity, see: <http://www.ceere.org/rerl/publications/published/communityWindFactSheets/>.

| Height | Wind Speed |           |                                     | Prevailing Wind Direction | Wind Shear Power Law Exponent |
|--------|------------|-----------|-------------------------------------|---------------------------|-------------------------------|
|        | Mean [m/s] | Max [m/s] | Mean Turbulence Intensity at 10 m/s |                           |                               |
| 60 m   | 5.84       | 17.9      | 0.215                               | N/A                       | 0.385                         |
| 40 m   | 4.99       | 15.8      | 0.253                               | 292.5, WNW                |                               |

The data can be found at the Renewable Energy Research Laboratory web site: [http://www.ceere.org/rerl/rerl\\_resourcedata.html](http://www.ceere.org/rerl/rerl_resourcedata.html).

### Data Recovery

All raw wind data are subjected to a series of tests and filters to identify data that are faulty or corrupted. The gross percentage of data recovered (ratio of the number of raw data points received to data points expected) and net data recovered (ratio of raw data points which passed all QA control tests to data points expected) are shown below.

|                          |        |
|--------------------------|--------|
| Gross Data Recovered [%] | 82.969 |
| Net Data Recovered [%]   | 79.357 |

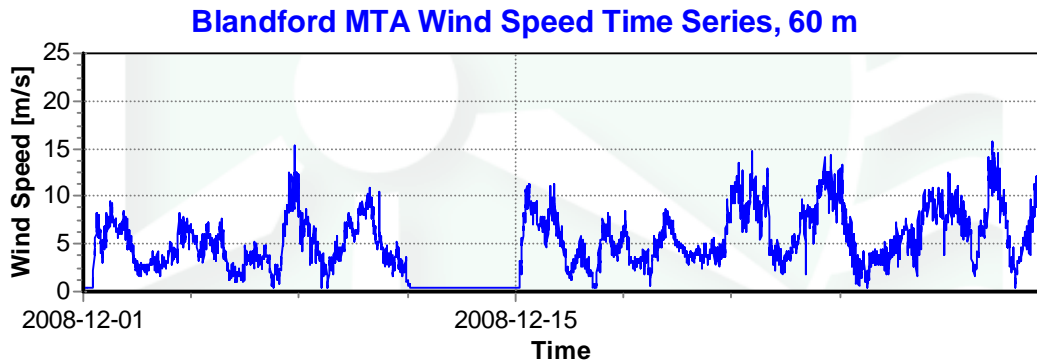
Information on the tests and filters used can be found at the Renewable Energy Research Laboratory web site: [http://www.ceere.org/rerl/rerl\\_resourcedata.html](http://www.ceere.org/rerl/rerl_resourcedata.html).

### Maintenance Issues and Changes to Site Configuration

The ice storm seen in the graph below damaged the 60m propeller anemometer (and vane) on 12/11/2008.

### Monthly Data Time Series

Below is a graph of wind speed at Blandford for the month of December, 2008, at the height of 60m.



*Plot by DQMS3 - dqms@dqms.com*