

# Michigan Anemometer Loan Program Description

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## Introduction

The Michigan Anemometer Loan Program was initially established by the Department of Energy's Midwest Regional Office with the goal of spurring wind development in the State of Michigan. Michigan State University Extension (MSUE) and the Michigan Agricultural Experiment Station are responsible for administering this program with assistance from the National Renewable Energy Laboratory. Please review the following loan description before filling out an application. MSUE has a limited number of anemometers available; thus, it may not be possible to approve all requests in this round (the third round) of applications. Also, refer to the MSUE wind website <http://web1.msue.msu.edu/wind/> for information on wind energy and the Michigan Wind Energy Resource Maps (link to maps is on the MSUE wind website).

## Borrower Eligibility Requirements

The borrower must provide proof of ownership of the property on which the anemometer will be placed or provide written authorization from the property owner. Anemometers are for farm and agricultural related businesses. Generally, only one anemometer will be lent to a given entity. All anemometers must be sited within the state of Michigan. For other areas outside the state of Michigan, contact the respective state energy office.

## Borrowing Process

The borrowing process consists of the following steps:

- Submitting an Application Form with a \$25.00 application fee and approval.
- Agreeing to the terms of the loan agreement and arranging for anemometer installation
- Submit payment of \$250.00 to partially cover the installation and removal costs of the anemometer system after being selected for an anemometer loan.
- Anemometer installation and maintenance
- Quarterly exchange of data plugs and sharing of the collected data
- Arranging for system disassembly

## Application and Approval

To request an anemometer, send an application to the MSUE contact listed on the application form. The purpose of the application is to verify that:

- The borrower will replace the data plug quarterly.
- The borrower is willing to share the data with the Anemometer Loan Program Center.
- The borrower has identified potential sites that have a favorable combination of a good wind resource, road access, transmission proximity, and land ownership.
- The borrower has envisioned a viable wind energy project if the wind resource is sufficient. Once the loan request is approved, MSUE will process the loan agreement.

## Loan Agreement

Upon receiving approval to borrow an anemometer, a representative should contact MSUE to execute a loan agreement and schedule an installation date for the 30-meter anemometer system. The loan period will be for up to 13 months. This should allow enough time for installation, collecting one year of data, disassembly, and return to MSUE.

## The Equipment

Each set consists of an NRG Wind Explorer anemometer, wind direction vane, temperature meter, data logger, and 30-meter (99 feet) tower. The installed system collects and saves wind speed, temperature, and direction data.

### **Anemometer Installation**

Anemometer installation will be done by the borrower under the supervision of MSUE using the procedures contained in installation manual of the anemometer manufacture. With completion of the loan agreement the borrower will schedule an installation date for the anemometer.

If for any reason, the tower must be lowered, the borrower must contact MSUE. However, because this equipment has a good reputation for reliability, we expect that most users will not need to lower their anemometer tower prior to the end of the data collection period.

MSUE will provide technical assistance with the installation of the tower and programming of the data logger.

### **Processing Wind Data**

The Wind Explorer anemometer collects continuous wind speed, temperature, and direction data. This data is stored as 10-minute average data in a data plug. Each anemometer will include two (2) data plugs. Each plug will hold roughly seven months of ten-minute data. However, as part of the loan agreement, the user must replace the plugs quarterly. Every quarter a self-addressed stamped envelope will be mailed to the borrower along with a new data plug. The borrower is responsible for replacing the data plug (located at ground level for easy replacement) and mailing the data plug to Anemometer Loan Program Center in the self-addressed envelope. A copy of the data results will be sent to the borrower and MSUE will publish a full report upon completion of the monitoring period. Please be advised that all wind speed data will be in the public domain.

### **Return of the Anemometer and Tower**

Michigan State University Extension must be notified whenever an anemometer is lowered and disassembled. Upon completion of data collection, MSUE will schedule a time for the borrower to disassemble the tower and anemometer under the supervision of MSUE.

### **Agency Roles and Responsibilities**

MSUE selects qualified borrowers, manages the lending of the anemometers, and offers technical support on siting, installation, and operation of the anemometers as well as analysis of the collected wind speed data. For information contact:

Steve Harsh  
Department of Agricultural Economics  
307 Agricultural Hall  
Michigan State University  
East Lansing, MI 48824

### **Questions/Comments/Suggestions for Improvement**

Eric Wittenberg  
Anemometer Loan Program Center  
213F Agriculture Hall  
Michigan State University  
East Lansing, MI 48824  
Email: wittenbe@msu.edu

## Michigan Anemometer Loan Program Application

First name \_\_\_\_\_ Last name \_\_\_\_\_  
Street Address \_\_\_\_\_ Phone number \_\_\_\_\_  
City \_\_\_\_\_ Best time to call \_\_\_\_\_  
State & Zip Code \_\_\_\_\_ Email address \_\_\_\_\_  
Site Elevation \_\_\_\_\_ Acres at site \_\_\_\_\_  
Proposed site: County \_\_\_\_\_, Township \_\_\_\_\_, Section number \_\_\_\_\_

**Please enclose a copy of your most recent electric bill.**

**Please enclose a \$25 application fee.**

Are you the owner of the proposed site? (Circle one) YES NO

If not the owner, can you obtain a release from the owner for installation of an anemometer and perhaps a wind turbine in the future? (Circle one) YES NO

**NOTE:** If unsure of terms or definitions, see the MSUE wind website <http://web1.msue.msu.edu/wind/>

Describe the nature of your business including what you produce and volume of production (e.g., produce 5,000 market hogs and grow row crops on 800 acres)

What is the purpose/goal of the project for which you are requesting the anemometer (e.g., on-site energy use, net-metering opportunity, energy sale, etc.)? Be specific on how electricity generated by a wind turbine will be used by your operation.

Please describe your site: Soil type (rocky, clay, soil, etc.). Amount of open space available. Elevation relative to surrounding areas (e.g., site at higher or lower elevation than surrounding areas). List any obstacles (e.g., large trees, buildings) that may influence the wind flow.

Additional information regarding the proposed site:

A. Provide a sketch of your proposed site. Be sure to indicate proposed location of the anemometer, any near by structures, the location and name of the nearest major roads (e.g., state, country or city maintained), location of the power grid, and other prominent features (e.g., trees) at the site that will impact wind flow. Also indicate the distance that the anemometer will be from the major roads, power grid, and structures. If there are any areas that are excluded for any reason (e.g., cultural, legal, being a “good citizen”), also indicate these areas on the sketch.

B. I have checked with the local authorities and they are not aware of any legal, environmental, or other obstacles that would prevent the installation of a 30-meter (99 feet) anemometer tower at the proposed site. Indicate by initialing \_\_\_\_\_. If there are possible restrictions, please list.

C. Other reasons that suggest this would be a good site for wind energy.

I verify that I have read the Loan Program Description and understand the terms associated with this application. Indicate by initialing \_\_\_\_\_

Signature Application must be received by **August 1, 2008**. Sent application to: Eric Wittenberg, Department of Agricultural Economic, 213F Agricultural Hall, Michigan State University, E. Lansing, MI 48824.