

# Wind Resource Temporal Variability Report

Diurnal and monthly variability of wind resources based on data from the NREL  
Wind Toolkit

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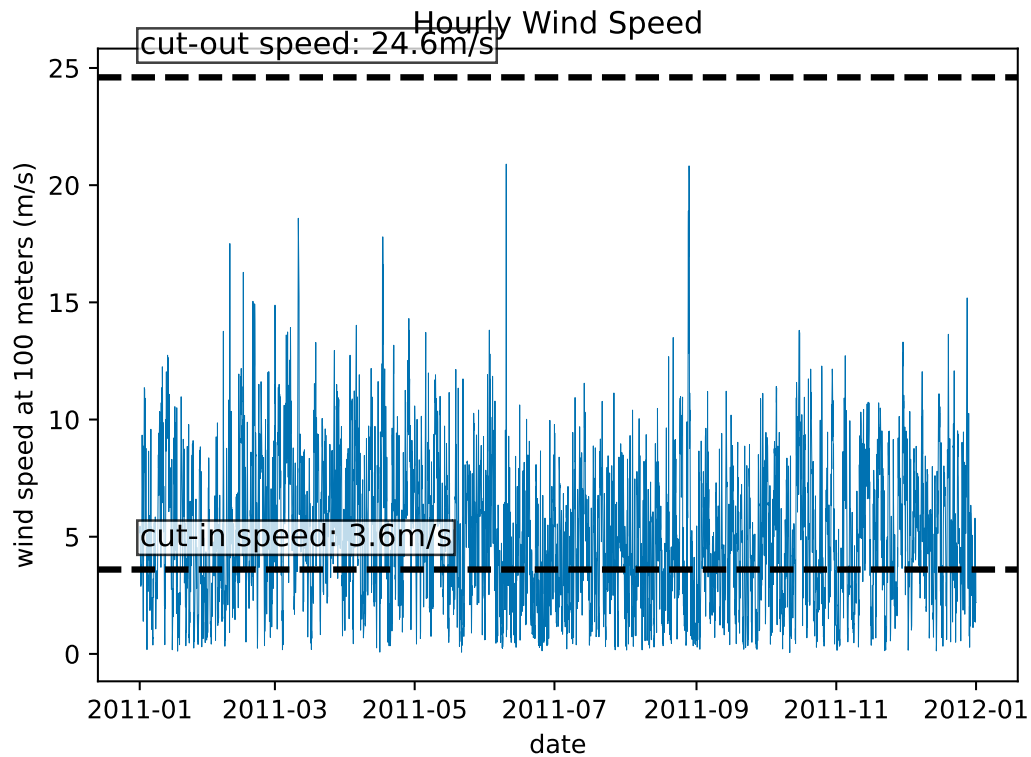
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## Introduction

This report provides an overview of wind resources for Umass Amherst from 2011-01-01 to 2012-01-01. This analysis is based on the wind speed at 100 meters dataset within the National Renewable Energy Laboratory (NREL) Wind Integration National Dataset (WIND) Toolkit.

## Analysis

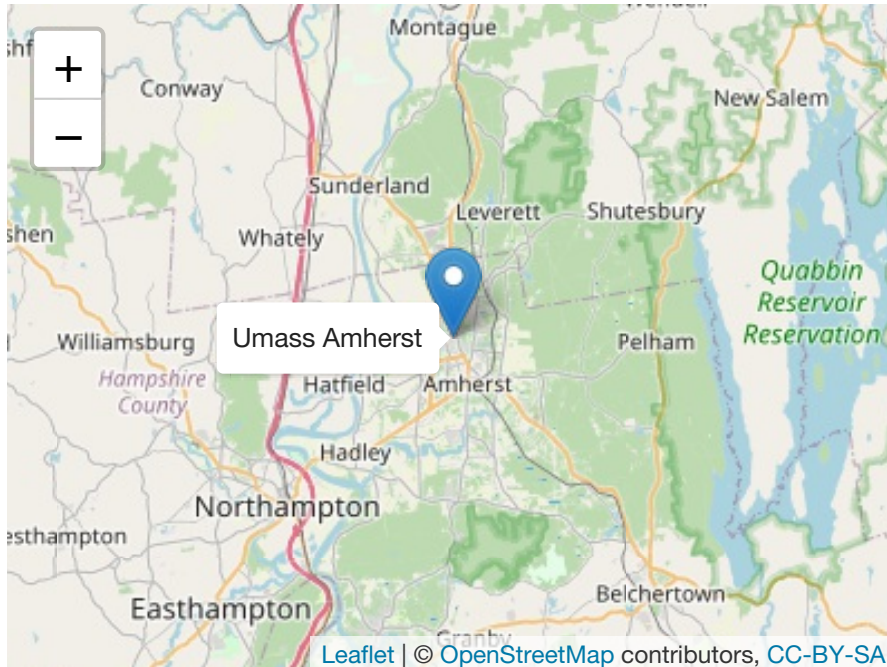
The graph below shows hourly wind speed for Umass Amherst and the selected time range. Wind speed values are show in relation to the specified turbine cut-in and cut-out speeds.



The annual average wind speed for Umass Amherst was 5.16 m/s. This is BELOW the value of 5.8 m/s recommended by the U.S. Energy Information Administration. Wind speed was below the cut-in speed of 3.6 m/s for 3,028 hours. Therefore, wind turbines could not operate 34.57 percent of the time due to lack of wind. Wind speed exceeded the cut-out speed of 24.6 m/s for 0 hours. Therefore, wind turbines could not operate 0 percent of the time due to strong wind. Between 2011-01-01 to 2012-01-01, wind speeds at this location were within the acceptable operating range of 3.6 m/s to 24.6 m/s for 5,732 hours. Therefore, turbines could operate 65.43 percent of the time.

## Site Map

The map below shows the location of Umass Amherst.



## Citations

Draxl, C., B.M. Hodge, A. Clifton, and J. McCaa. 2015. [Overview and Meteorological Validation of the Wind Integration National Dataset Toolkit \(Technical Report, NREL/TP-5000-61740\)](#). Golden, CO: National Renewable Energy Laboratory.

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