

Siting Guide

Introduction

The American Wind Energy Association estimates that there are 13 million homes in the United States that have a viable wind energy resource.

The chances are very good that you are among them, which gives you the option to take advantage of this clean, renewable, and cost effective energy source.

Is Wind Energy Right For You?

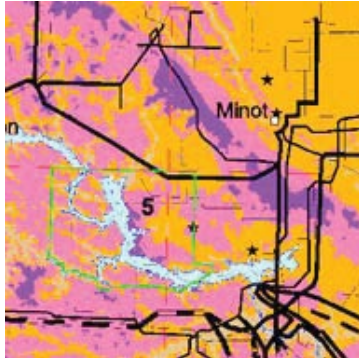
Here are a few factors to consider when deciding whether or not you should invest in a small wind generator for your home, farm, or small business.

- You should have an average wind speed of 10 mph, though 12 mph is ideal
- Your property should not be obstructed with trees and buildings. ideally you should have about .5 acres
- The local zoning laws must allow for the installation of structures that are atleast 42' tall, and in some cases, much much taller
- You electric utility should have interconnection or net-metering law (only needed if you are installing a grid-connected system)



Wind Resource

Generally, if you feel like you have a very windy site you are usually correct, and site is acceptable, if not ideal for a small wind generator. But, of course, it is still important to do your homework and make certain that your wind resources are proper for Wind Energy.

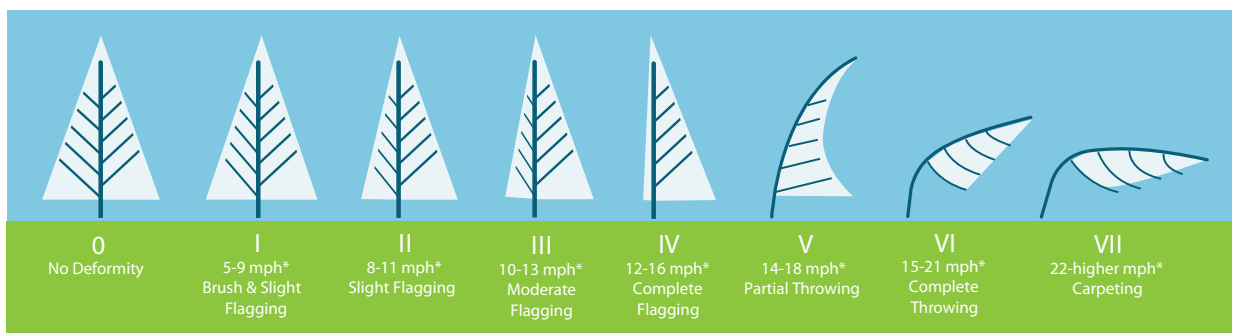


The best, and easiest way to determine the wind resources of your site is to consult your regional or state wind maps. These maps are prepared by professionals, and generally provide the most accurate wind speed assessment for most locations within the United States.

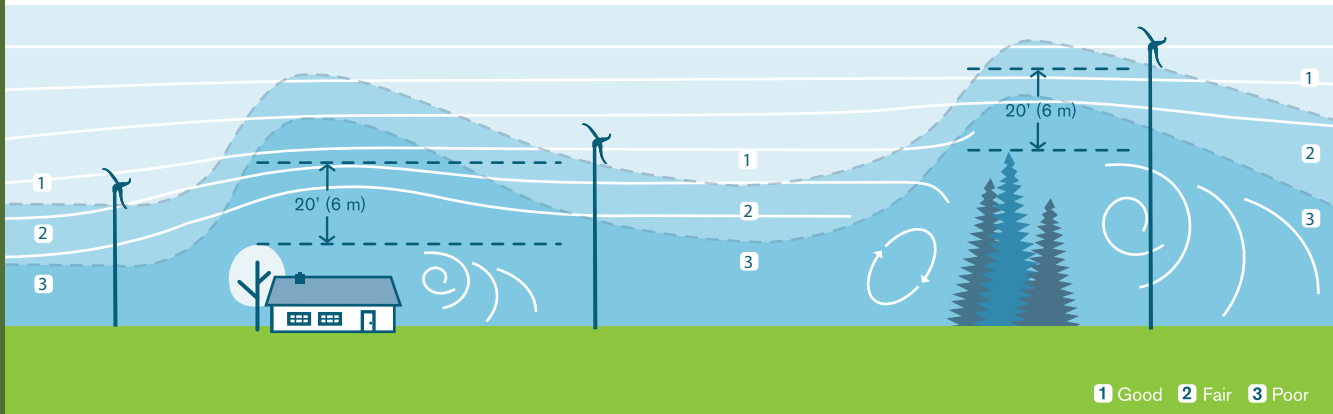
Wind Energy Direct offers a large number of wind maps for our customers. For wind maps in your area, please choose "Wind Maps" in the right hand link menu of our website.

These maps are about 80% accurate, and measure the wind speeds at a height of approximately 150 ft above the ground. For the best return on your investment, you should make sure that your location on the map is within a Class III or better wind zone.

Additionally, you can assess the wind speed of your location using the Griggs-Putnam Index, which measures wind speeds in classes by the way that the wind in the area has affected the growth and deformation of vegetation. If the vegetation (trees, shrubs, etc) shows signs depicted in the chart below, you can make the assessment that your Wind Energy Potential is within the class that is illustrated in your own vegetation.



You can also perform a wind Speed assessment of your location with an anemometer. Wind Energy Direct does not suggest this route for its customers because tower mounted meters can cost nearly as much as small wind generators, and handheld meters are not accurate enough to give you usable data.



Once you have determined that you have a good wind resource, you must determine on your property is the best location to install your wind generator for optimum performance and maximum return on investment

The ideal location for a small wind generator (or a large one for that matter) is a flat, open space with good wind from at least one direction (known as the prevailing wind direction), a coastline, or a smooth hilltop with an open area in the prevailing wind.

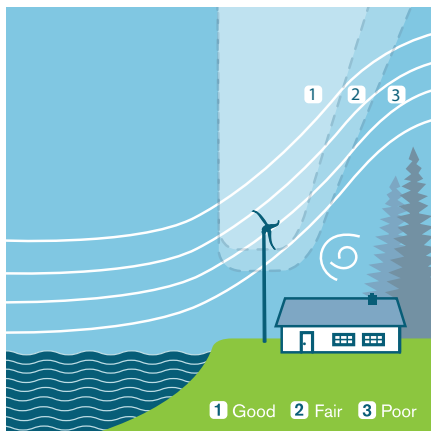
Wind that is turbulent (often caused by obstructions such as trees, houses, and other large objects) is known as bad wind. Bad wind is damaging to Wind Generators as it puts unnecessary strain on the components, dramatically shortening the life expectancy and lowering the performance of the system.

For this reason, when siting, Wind Energy Directs recommends that our customers look for open areas that are far from any obstructions (houses, trees, etc), or use a tower that is tall enough to hoist their generator far above these hazards. In fact, it is recommended that customers use the tallest towers that are allowed by their local ordinances and by their budget. As a minimum, Wind Generators should be at least 30' above any obstructions that are within a 250' radius of the wind generator.

Siting Guide

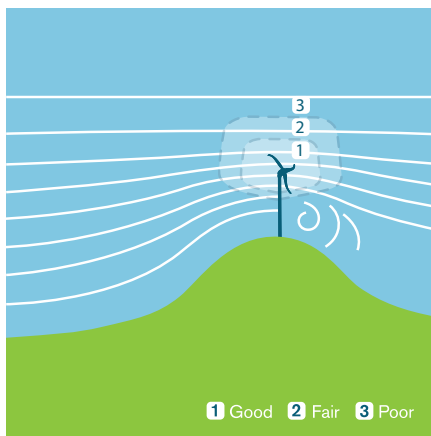
A-Typical Site

Certain have specific needs for wind energy because of their layout and wind patterns. If your site is on this list, please use this page for siting considerations.



Coastal or Lakeside

Very strong prevailing winds typically blow from the ocean. If this is the case, it is very important to install your wind generator as close to the coastline as possible. Trees and taller structures can be downwind from the wind generator.



Ridge Tops

Wind compresses as it blows over the top of a hill, increasing the wind speed. With proper placement, you may be able to use a shorter tower. Wind Energy Direct never recommends any tower shorter than 33' tall. It is important to follow the general rule; the tower should always be at least 20' above any surrounding object.



Plateau or Mesa

Winds may be very turbulent running off a cliff causing wind shears. It is important to site the generator far enough from the cliff to avoid turbulent wind.