

Location of a Wind Turbine

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Determine the place where you want to put your turbine. An area of higher wind is almost always the best choice.

If it is on a flat area, ground or roof, you should have exact measurements of the location and the direction of where most of the wind comes from. You will ideally place your group of turbines so that they are side by side perpendicular to the direction of the wind.

To get the cluster effect, they should be at a distance from shaft to shaft of 1.2 times the turbine diameter. The spec sheet shows the turbine diameter and ideal spacing.

If you are purchasing only one turbine, it doesn't matter, since this turbine reacts to wind from any direction.

Another consideration is to locate them close to the point of use or a point of electrical connection to the grid. This reduces expenses, usually not much, of electrical cabling.

Here is an example: You are putting the turbines on the ground and decided to use the largest size, since the larger the size, the more cost-effective, and placing them on the ground works for you.

The spec sheet gives the turbine diameter as 2425 mm.

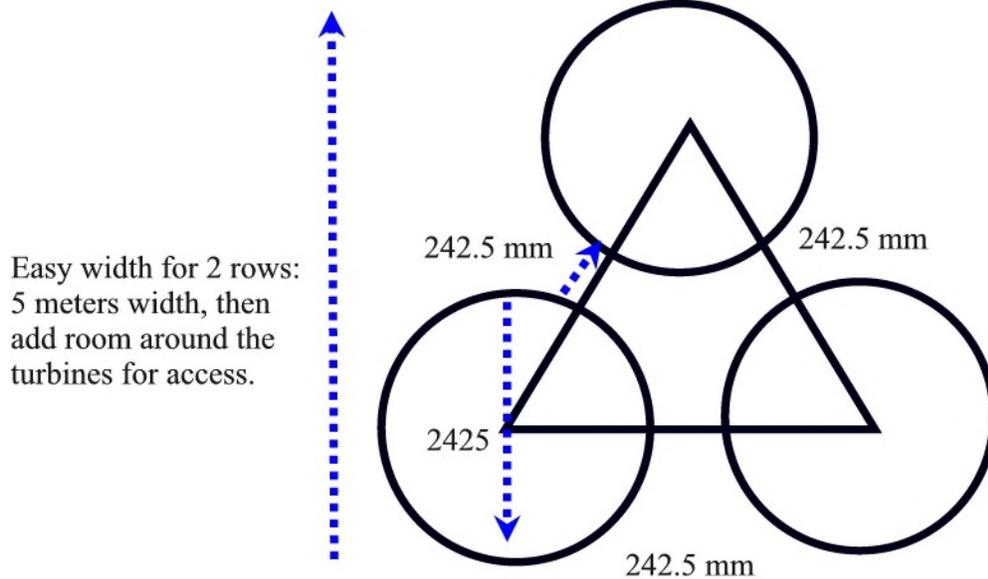
The distance for ideal cluster effect is 0.1 times 2425 mm to give the space between the turbine blades when as close to each other as possible. That means each turbine's total space is 1.1 times 2425 = 2667.5 mm. That means that a space that one could fit a row of 10 turbines in $10 * 2667.5 = 26,675$ mm = 26.675 meters = 87.5 feet. You should also allow more space in front and back so you have a little room to maneuver if you area is limited. Allow at least half a meter in all directions around your wind farm.

This row of turbines is ideally set perpendicular to the direction of prevailing wind direction. That is why wind information is important in setting up your wind farm. The cluster effect will still work at an angle of 45 to 135 degrees from the prevailing wind direction.

If you have wind of 6 meters per second or more and enough room, it is worthwhile to set up a second row of turbines after the first. Each turbine in the second row will produce as much energy as a single turbine all by itself because the cluster effect works in the second row also.

If you have two turbines in the front row, the third turbine in the second row should be places at the same distance from each turbine at 45 degrees from each turbine in the first row. The distance between each turbine is 0.1 times 2425 = 242.5 mm.

Here is how it would look:



On a slanted roof, you should generally have only one row, and on the very top. It is best if the angle of the roof is in line with prevailing wind.

Don't forget to put up a fence for safety. And then get your permit.

What size of turbines should you pick?

You can play with your available space and the power available from the different turbines. The bigger and larger the turbines, the more cost effective, in general. One has to take installation costs into account.

Here is a table about the way to locate the different sizes, in general:

Size	Location
Large	Land or very strong roof
Medium	Land or strong roof
Small	Land or regular roof
Mini	Personal size for a garden, a camping trip, a boat.

What size generator do you pick for the large and medium models? In general, you will get the best returns as follows:

Wind Speed in meters per second	Generator capacity in kilowatts
>6	5
5-6	3
<5	2

Now you are ready to place your order with information about number of turbines, size of turbines, the electrical capacity of the turbines.