

Q: Why do vertical wind turbines look so different while horizontal turbines are quite similar in appearance?

A: Because the lack of design theories and design basis, many companies apply the experiences of horizontal turbines design to vertical turbines, and some companies design a vertical turbine based on their preference. Most of the vertical turbines designed in this way are drag-type.



Q: Why do so many vertical wind turbines have difficulty generating electricity?

A: Vertical wind turbines could be categorized into drag-type and lift-type. Many drag-type vertical turbines or drag lift hybrid type turbines could easily rotate because of aerodynamic design, but generate very little electricity or couldn't generate electricity at all. Although some vertical turbines are lift-type, the designers don't master the characteristics of vertical turbines; they have chosen the wrong airfoil and other important parameters. Consequently the aerodynamic performance is very low. For some lift-type turbines, the RPM of the turbine windmill and generator don't match, which could cause less electricity generated as well. These are some major reasons that many vertical turbines don't generate electricity.

Q: How to choose a good vertical wind turbine?

A: A good turbine must have good performance in power generation, particularly in low wind speed, and must be able to work in a wide range of wind speed similar to large horizontal wind turbines. In addition, good methods of over-speed control and automatic mechanic brake are necessary features

of a good vertical turbine as well. Generator short circuit is quite common for braking, but it is not a good solution. It causes the degaussing of the permanent magnet generator, and eventually shortens the lifespan of the generator.



Q: Why do many vertical turbines fall apart and collapse when the wind speed is not very high?

A: As we know that wind power is proportional to the cube of wind speed, a doubling of wind speed results in 8 times of wind energy. Because vertical turbines can't yaw; if a vertical turbine does not have pitch angle control for over-speed regulation and automatic mechanical brake, it could break up and collapse very easily even when the wind is not very strong.



Q: What are the necessary features for vertical wind turbines to have commercial value?

A: A vertical turbine must have the electricity generation performance comparable to large horizontal turbines; have pitch control, over-speed regulation and automatic mechanical brake. Otherwise it has no commercial value.

Q: How is the performance of SAWT vertical turbines in relation to electrical generation?

A: SAWT vertical turbines have very high system efficiency, which is comparable to that of large horizontal turbines. Particularly in low wind speed, such as 3-8m/s, our turbines perform even better than large horizontal turbines. Pls. click on below link to see our real-time monitoring on our operating turbines.

Q. What wind speed does SAWT turbine start generating electricity?

SAWT wind turbines start turning and producing electricity in just over a 2m/s wind. The energy available in the wind rises dramatically with wind speed, and reach rated power output at around 12 m/s (around 28 mph).

Q. Do SAWT vertical turbines need to be stopped and taken down in excessive wind conditions?

A: No, SAWT turbines have pitch angle control so they never exceed their design rotation speed. The automatic brake will start when the wind speed reaches 25m/s, so the turbines are worry-free even in very strong wind.

Q: Can SAWT vertical turbines be installed on the roof?

A: Yes, they can be installed on various roofs. But depending on the material and structure of the roof, we may need to tailor design the foundation of the turbine for you.



Q. Can SAWT turbines be used to heat up a house or cold water?

Yes, we have a product for direct heating. The heater is directly connected with the controller of the turbine. This system doesn't need batteries, or an inverter. This is an application of wind turbines at a very low cost. It is perfect for people living in colder regions.

Q: Can SAWT vertical turbine be used with a solar panel or in a diesel-powered grid?

A: Yes, this could make a hybrid system.

Q: Why are SAWT vertical turbines are heavier than other vertical turbines?

A: We have designed our small vertical wind turbines based on the safety standard of megawatt horizontal turbines with a survival wind up to 55m/s. Moreover, our small turbines perform very well in low wind speed, so they are heavier than many other vertical turbines.



Q. What is a good location for a vertical turbine?

Serious consideration must be given to positioning of the turbine to get the best performance and reliability from it. The output from a wind turbine is highly sensitive to the wind. It is essential that turbines should be sited away from obstructions, Wind speed also increases with height so it is best to have the turbine high up. In practice, turbines need to be located near to the user, as far as possible though, keep away from local obstructions such as houses, especially large trees, or use a taller tower to ensure that the turbine is well above the obstructions.

Q: As long as the wind turbine is spinning, is it generating power?

A: It is not always the case. The voltage of the generator must reach the minimum input voltage of the inverter or battery charging voltage, it is considered as generating power.

Q. Are wind turbines noisy?

A: Most horizontal turbines have noise, while vertical turbines have much less noise. As a well-designed vertical turbine, the noise level shouldn't have an impact on its users; SAWT turbines belong to this category.

Q. Do vertical wind turbines affect livestock?

A: Wind turbines are very popular with farmers because their land and facilities consume a large amount of electricity. Vertical turbines do not disturb the livestock.

Q. Do vertical turbines hurt birds and bats?

A: No, vertical turbines do not hurt birds or bats.