Distributed Wind Myths

A quickly growing industry with substantial innovation, the distributed wind industry often sees new products appear, at times offered by companies with limited experience. While innovation is good and improvements are welcome, those who have been involved in the industry for some time all too often see emerging companies engage in overly aggressive sales hype, which can be harmful to both the industry and our customers. DWEA believes it is important for customers to be aware of common claims and why they are not scientifically credible.

Wind turbines can operate with little or no wind

A mistake often made by new manufacturers is to underestimate the wind speed necessary to produce electricity. Wind energy is kinetic energy and increases exponentially with wind speed. While this means that great power production can be achieved in areas with good to excellent wind regimes, it also means that there is very little energy available at lower wind speeds. For example, a turbine with a six-foot-diameter rotor would receive less than 10W at 4 mph wind speed, hardly enough to spin the rotor, let alone produce power. There simply is little energy in light winds. Companies claiming significant energy production at very low wind speeds hurt the entire industry and cause confusion and distrust among interested customers.

Wind turbines can defy wind power efficiency

Nearly 100 years ago, German physicist Albert Betz proved that the maximum efficiency of a theoretically perfect wind turbine is 59%, a fact well known to wind engineers. Attempting to extract more energy simply forces the wind *around* the rotor instead of through it. Now, a century later, there are still those who claim to exceed what has come to be known as the "Betz limit" or "Betz Law." In fact, there are companies in the market that claim to produce more energy than the wind actually contains! Customers should be aware that such manufacturers exist and perform their own due diligence about feasibility as they consider their different options.

Turbulent wind is good

Wind turbines operate best in the path of laminar (smooth) wind. Turbulence decreases their performance. However, customers will occasionally run into manufacturers who will market their turbines as 'turbulence-proof' or perhaps even inherently benefiting from turbulence. All turbines behave differently in different levels and types of turbulence. No independent studies exist that conclude how individual turbines react. Two things, though, are clear: there is a reduced amount of extractable energy in turbulent wind and turbulence is detrimental to all wind turbine designs.

Short towers, tall towers – No difference!

Wind speed increases and turbulence decreases the further you get away from the ground. Closer to ground level, trees, buildings, and other obstacles disturb the wind. All wind turbine customers should be aware of this and realize the golden rule–the taller the turbine tower is; the more energy output you can expect! There is no such thing as a wind turbine that works best at low heights.

Wind turbines are noisy

There are no magical turbines, or any other moving objects for that matter, that operate with zero sound levels. Yet compared to other sounds we are familiar with in our everyday environment, most small wind turbines are comparatively quiet and operate unnoticed. A widely available certification and testing standard exists, and most manufacturers will willingly disclose and describe their turbine's sound power (decibel) levels.

Wind turbines destroy wildlife

Customers are often understandably concerned with how their wind turbine will affect birds and bats. As a result, many emerging manufacturers claim to design turbines that prevent any impact on flying wildlife. However, the numbers make it clear that ***all*** small wind turbines are exceptionally safe for wildlife! In-depth independent studies evaluating small wind turbines reach positive conclusions about their safety for wildlife, including turbines installed near wildlife refuges and conservation districts. In fact, the National Audubon Society, on its web site, clearly states its support for the development of wind energy.