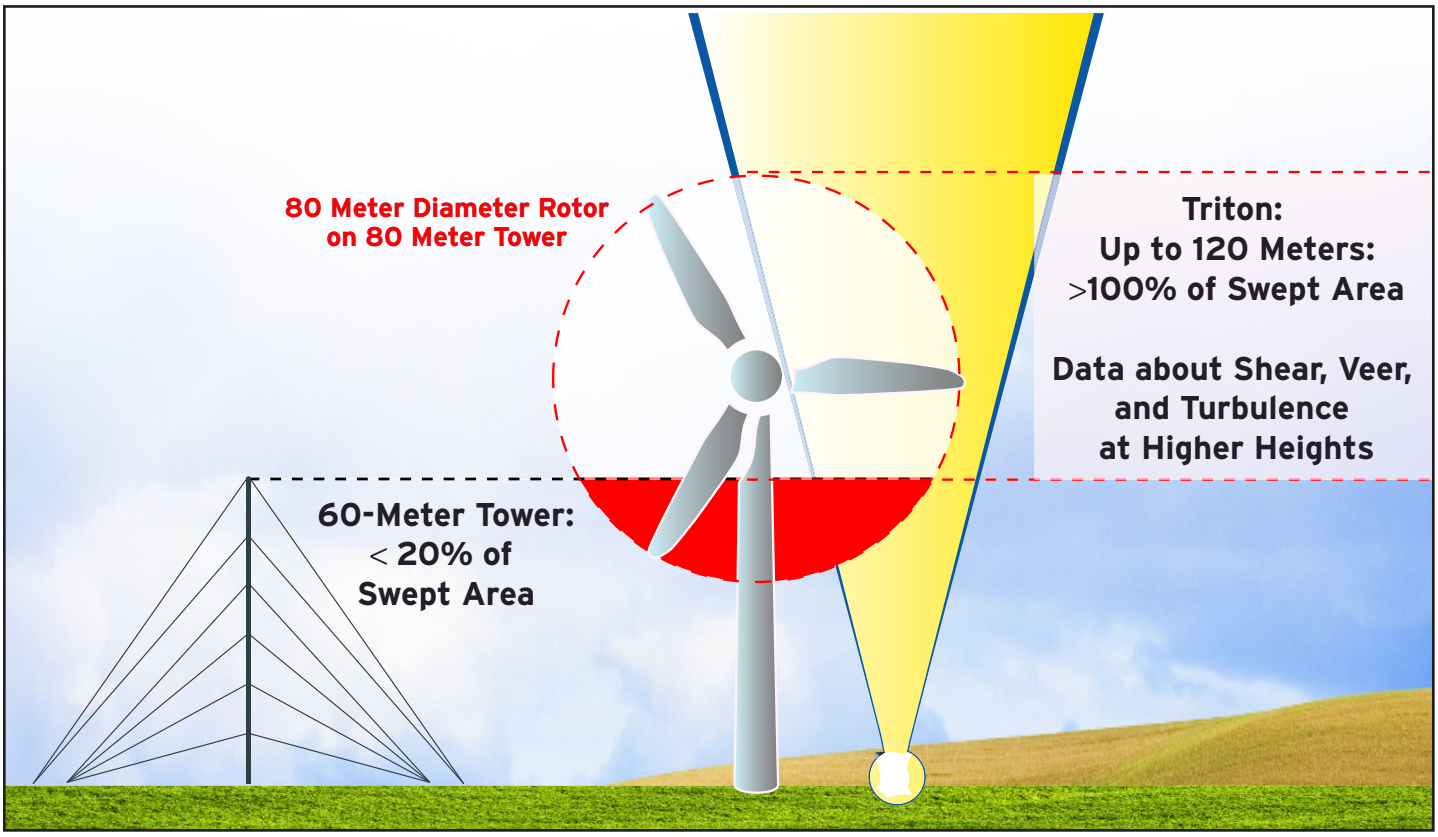
TRITON™

SONIC WIND PROFILER

Higher Heights and Higher Quality

Triton's Sonic Wind Profiling Captures More Data than Conventional Wind Assessment Techniques



Triton™, Second Wind's next-generation sonic wind profiler, uses sonic detection and ranging (sodar) to remotely gather data about wind. The Triton system is much easier to deploy than a meteorological tower, and can gather data at heights ranging from 30 meters all the way up to 200 meters.

As Triton has been deployed in field studies and commercial applications, studies of the wind data are expanding our knowledge of what happens between 60 and 120 meters — essential data that affect predictions of power performance. The following is some of what we have learned.

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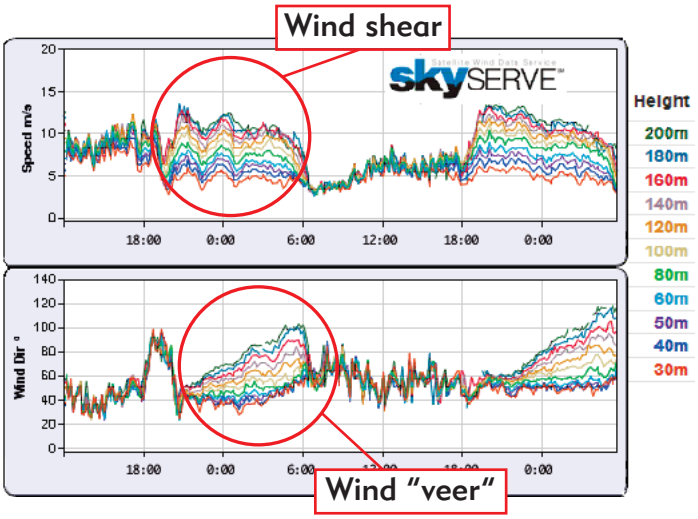
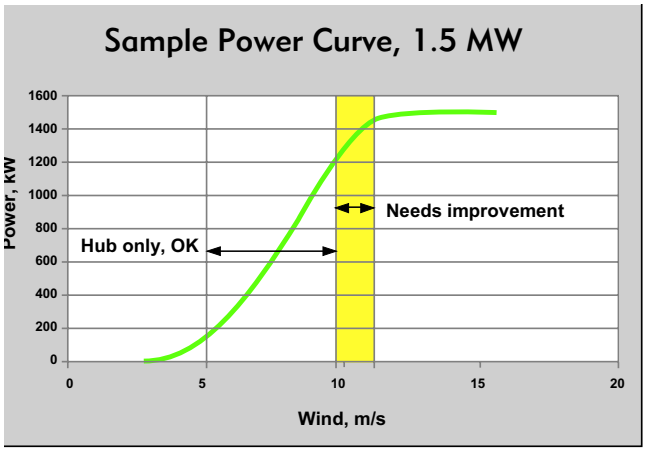
Strong Diurnal Wind Shear Effects

Site	Tower Heights	Triton **Overall**	Tower **Overall**	Triton ☼ **DayTime**	Tower ☼ **DayTime**	Triton ☾ **NightTime**	Tower ☾ **NightTime**
California	58 / 33	0.11	0.15	0.05	0.09	0.16	0.20
Kansas	60 / 45	0.20	0.13	0.08	0.01	0.32	0.24
Mass.	60 / 40	0.36	0.45	0.23	0.32	0.52	0.63
Colorado	58 / 40	0.19	0.15	0.05	0.06	0.25	0.24
BAO	100 / 50	0.13	0.16	0.09	0.11	0.17	0.20
NREL	80 / 50	0.06	0.09	0.04	0.06	0.09	0.12
Wash.	60 / 40	0.09	0.11	0.04	0.08	0.15	0.15
Average		**0.16**	**0.17**	**0.08**	**0.10**	**0.24**	**0.25**

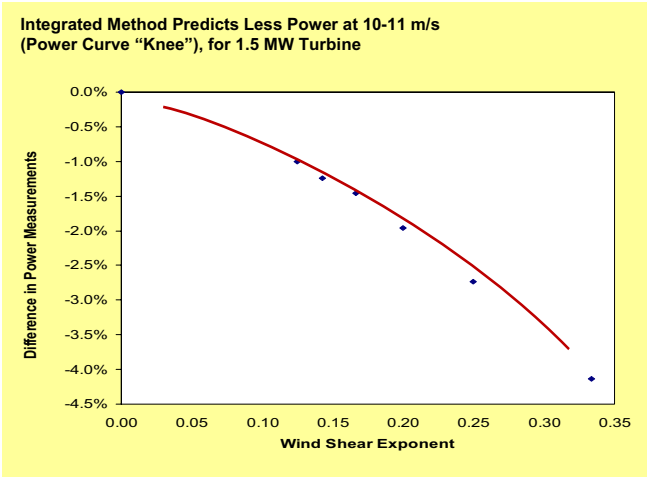
Not Only Wind Shear, but Wind Veer



In wind energy, wind shear is a difference in wind speed with height. Wind veer is a difference in wind direction with height. Both wind shear and wind veer affect the performance of turbines, and need to be taken into account when projecting power performance.



Smarter Asset Management with Triton



The higher the wind shear, the greater the variation across the rotor and the less power a turbine will produce around the "knee" of the power curve.

Triton's more accurate power predictions make it the new tool of choice for ongoing performance monitoring and asset management.

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