

Vortex Bladeless aims for lower-cost wind energy approach

May 18 2015, by Nancy Owano



A technology leap forward in wind energy? Or, as the company in charge calls it, a "new paradigm" of wind power, lowering costs, requiring no training, using fewer supplies? They believe they have a great idea and they aim to bring it to market. They will start crowdfunding next month. The company is Vortex Bladeless.

David Yanez, co-founder, Vortex Bladeless, said it all began with a bridge disaster. The bridge, he said, started swaying and oscillating in heavy winds. This was the Tacoma Narrows Bridge collapse of 1940, and the event occurred under 40-mile-per-hour (64 km/h) wind conditions. The collapse would in later years continue to be a topic among engineers and scientists discussing the aeroelastic flutter and motivating their research in aeroelastics.

The structure, said Yanez, was caught up in aeroelastic coupling. Yanez and team worked on recreating similar conditions to lead to their development of a bladeless wind turbine. Instead of turning, the turbine oscillates, producing movement and displacement, said Yanez. "The system is based on the same principles as an alternator—electromagnetic induction." They multiply that movement and speed magnetically—without any gear assemblies or ball bearings. They turn the mechanical energy of the structure into electricity.

Writing in *Treehugger*, Derek Markham, commented : "The Vortex wind generator represents a fairly radical break with conventional wind turbine design, in that it has no spinning blades (or any moving parts to wear out at all), and looks like nothing more than a [giant](#) straw that oscillates in the wind. It works not by spinning in the wind, but by taking advantage of a phenomenon called vorticity, or the Kármán [vortex](#) street, which is a 'repeating pattern of swirling vortices.'"

Raul Martin, Vortex Bladeless co-founder, said, "Compare our invention to a conventional wind turbine with similar energy generation—ours would cost significantly less," around 50 percent or 47 percent less. The company site said that Vortex saves 53 percent in manufacturing costs and 51 percent in operating costs compared to conventional [wind turbines](#).

"Because there is no contact between moving parts," said the Vortex site,

"there is no friction. Therefore no lubricant is required."

Graham in *Treehugger* said another advantage was that "the devices can be used to generate more power in less space, because not only is the wind wake narrower than a [traditional](#) turbine, but installing them closer together can actually be beneficial to the technology, based on [wind](#) tunnel testing."

The next step? Martin said the step will be to develop a small 4-kilowatt turbine for small businesses, distributed energy grids or individual homes.

More information: vortexbladeless.com/home.php

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