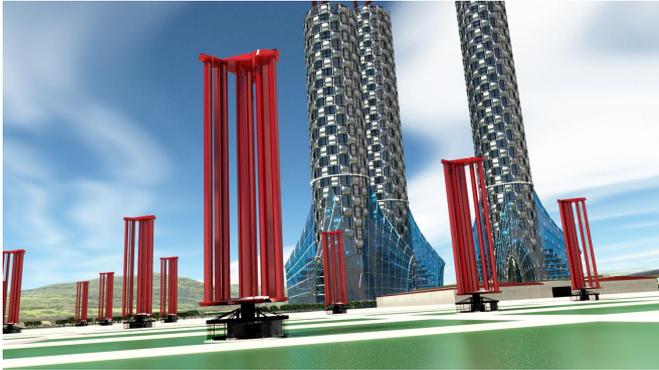


Who's afraid of the big bad typhoon?

Engineer works on typhoon turbine

30 September 2016, by Nancy Owano



Credit: challenergy

(Tech Xplore)—Talk about making lemons into lemonade. Translate into talk about turning nature's cruel storms into alternative sources of green energy. We are looking at a turbine that loves typhoons. In typhoon winds, the amount of energy that it can generate and store is enormous. Matthew Humphries, senior editor, *Geek.com*, was one of a number of tech watchers reporting on the turbine this week.

Atsushi Shimizu is the engineer who created the typhoon turbine. Humphries said it looked very much like an [egg](#) beater.

Nature World News said it was the world's first typhoon wind turbine "designed to withstand the strongest tropical cyclone while harnessing its immense [force](#)."

Making a difference is an understatement. According to a CNN report, the energy from one [typhoon](#), said Shimizu, could power Japan for 50 years.

Shimizu quit his job in 2013, said Humphries, and founded Challenergy. He wanted to develop a

turbine able to operate in a typhoon, and capable of handling Japan's unpredictable wind patterns.

So what is so special about this turbine that enables it to harness such storms? It is based on conventional wind turbine functionalities, but "an omnidirectional vertical axis is designed to withstand unpredictable wind patterns of tropical cyclones," said *Nature World News*. Also, the engineer incorporated what the report explained as the Magnus effect. This is "the sideways force on a spinning object that pushes it in a direction perpendicular to the direction of the movement. This effect exerts control over the [turbine blades](#)." The engineers, to adjust the speed of the blades, could tighten the center rod.

The current design reached 30 percent efficiency during simulations. Is this impressive? The fact that 30 percent does not measure up to commercial wind turbines managing 40 percent does not deter the engineer from further work and the number does not detract from what Shimizu accomplished, a turbine able to harness the energy from a typhoon.

Junko Ogura and Jenni Marsh in CNN underscored the significance this could have in Japan, where, before the Fukushima disaster, nuclear power was expected to account for 60 percent of its primary energy by 2100. The earthquake and tsunami, they said, caused three nuclear meltdowns and derailed the plan.

"Today, Japan imports about 84% of its energy requirements, and many of its nuclear reactors are now dormant, as the country shies away from this energy source."

So what's next? CNN said that in July, the first prototype was installed in Okinawa. "Now all the Challenergy team needs to test their creation's efficiency in real life is a typhoon."

A recent article in *The Japan Times* by Mark Schreiber said, "Six typhoons have made landfall this year on the Japanese archipelago, already giving 2016 the distinction of being the second-worst year in terms of direct typhoon hits in modern [times](#)."

More information: challenergy.com/

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