



# The wings of wind turbines





## Overview

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The rotor in a wind turbine is shaped like an airplane wing, with two or three blades mounted on a shaft to form a rotor. When the wind blows, a pocket of low-pressure air forms on one side of the rotor. They consist of several key components that work together to produce clean, renewable energy. Andean condor flying in the Andes mountains. Thomas Armeli/iStock Nature often provides solutions to complex engineering problems, and researchers at the University of Alberta. Engineers from the University of Alberta, in Canada, are designing wind turbines based on the wings of the heaviest bird in the world: the Andean condor, capable of flying more than 200 km in a single plane, taking advantage of the upward currents caused by the orography.



## The wings of wind turbines



### [They Design Wind Turbines Inspired by the Heaviest Flying](#)

Engineers from the University of Alberta, in Canada, are designing wind turbines based on the wings of the heaviest bird in the world: the Andean condor, capable of flying more than 200 ...

### [Wind turbines based on condor wings could capture more energy](#)

A design modification inspired by the wings of the Andean condor could increase the energy generated by wind turbines.



### ['Wings' On Poles: Bill Gates-backed Wind Power Tech Promises 75%](#)

This design replaces three large blades with 82-foot poles and 33-foot vertical wings that generate power as they move along a track. A Bill Gates-backed start-up aims to revolutionize wind ...



## Efficient Wind Turbines Inspired by Insect Wings

To compensate, some insects, such as bees and dragonflies, have flexible wings that are designed to alter shape in response to physical forces in a way that is aerodynamically effective. This flexibility ...



PUSUNG-R (Fit for 19 inch cabinet)



## What Is The Wing Of A Wind Turbine Called

Wind turbines can be categorized into Horizontal Axis Wind Turbines (HAWT) and Vertical Axis Wind Turbines (VAWT). The shape and twist of the blades enhance their aerodynamic ...

## [They Design Wind Turbines Inspired by the Heaviest Flying](#)

Engineers from the University of Alberta, in ...



## DualWingGenerator , Festo USA

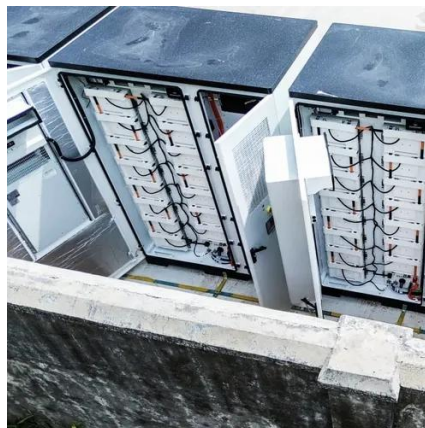
Self-optimizing, highly efficient and inspired by the flight of birds: the bionic wind turbine uses two pairs of counter-rotating wings to generate energy.

## [Wind turbines inspired by insect wings are](#)



## 35% more efficient

Wind turbines produce 4% of the planet's energy, but they only work well when the wind is blowing just right. Now, by drawing inspiration from the flexible wings of insects, scientists have found a way to ...



## Researchers design highly efficient wind turbine mimicking bird wings

A group of Canadian researchers has designed unique winglets for wind turbine blades that are based on the aerodynamic wings of a condor.

## Biomimicry breakthrough: Condor wings power turbines

They've turned to the majestic Andean condor to find ways to make wind turbines more efficient. The result is a novel winglet, inspired by the condor's wings, that can boost a turbine's



## More efficient wind turbines thanks to insect wings

Discover how the flexibility of insect wings has inspired improvements in wind turbines, increasing their efficiency by up to 35%.





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