PURDUE INNOVATES | Office of Technology Commercialization

HyperBlade

The patented HyperBlade coaxial, counter-rotating wind turbine generates 30 percent more power with the same footprint and installation cost as conventional designs, while nearly halving kick-in power.

Wind turbines convert the kinetic energy in wind into mechanical energy that is then converted by a generator into electricity. A coaxial wind turbine utilizes a second counter-rotating rotor to increase the amount of kinetic energy converted from a particular patch of sky.

AirBuoyant, LLC has developed the patented HyperBlade, a coaxial, counter-rotating, bladed wind turbine design that is 30 percent more efficient than conventional designs for the same blade diameter and reduces kick-in power by nearly half over conventional layouts. The HyperBlade has the same footprint of standard horizontal wind turbines and has the same cost of implementation, yet generates more power. A small, 2 to 3 kW variant of HyperBlade is currently being manufactured for customers and has a broadening install base across many industries and applications.

Advantages:

-It is 30 percent more efficient

-Installation cost is the same

-Footprint is the same

Potential Applications:

-Wind turbine industry

-Clean energy

-Green technology

TRL: 9

Intellectual Property:

Technology ID

BITAR-01

Category

Energy & Power Systems/Power Generation

GreenTech/Environmental Remediation & Pollution Control

Authors

Pete Bitar

Further information

Will Buchanan

wdbuchanan@prf.org

View online

Utility Patent, 2011-10-04, United States

Keywords: coaxial wind turbine, counter-rotating rotor, HyperBlade, efficient wind power, 30 percent more efficient, reduced kick-in power, clean energy, green technology, wind turbine industry, renewable energy