Advanced Research Projects Agency • ENERGY

FIRST OPEN SOLICITATION

FLODESIGN WIND TURBINE

MIXER-EJECTOR WIND TURBINE

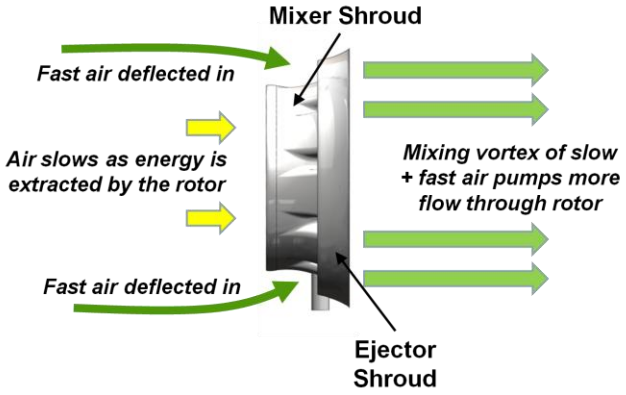
PROJECT TITLE:	Breakthrough High Efficiency Shrouded Wind Turbine		
ORGANIZATION:	FloDesign Wind Turbine Corp.	LOCATION:	Waltham, MA
PROGRAM:	FOA1	ARPA-E AWARD:	$8,325,400
TECH TOPIC:	Renewable Power Generation	PROJECT TERM:	2/22/10 – 12/31/12
WEBSITE:	www.flodesignwindturbine.org		

CRITICAL NEED

Wind power represents a small but rapidly growing contribution to the U.S. renewable energy portfolio. While the cost of wind power has decreased as a result of building at ever-larger scales, challenges such as excessive noise, expensive operations and maintenance, siting and transmission limitations, manufacturing and transportation of large blades, and higher energy costs from smaller scale turbines continue to hinder further deployment.

PROJECT INNOVATION + ADVANTAGES

FloDesign Wind Turbine's innovative wind turbine, inspired by the design of jet engines, could deliver 300% more power than existing wind turbines of the same rotor diameter by extracting more energy over a larger area. FloDesign Wind Turbine's unique shrouded design expands the wind capture area, and the mixing vortex downstream allows more energy to flow through the rotor without stalling the turbine. The unique rotor and shrouded design also provide significant opportunity for mass production and simplified assembly, enabling mid-scale turbines (approximately 100 kW) to produce power at a cost that is comparable to larger-scale conventional turbines.



IMPACT

If successful, FloDesign Wind Turbine's new turbine would accelerate adoption of mid-scale wind turbines in locations that were previously not possible, while helping position the U.S. as the leader in advanced energy technologies.

- SECURITY: Enabling electricity generation from alternative energy sources like wind can alleviate reliability and security concerns associated with the electric grid.
- ENVIRONMENT: Facilitating the widespread use of clean energy reduces the level of greenhouse gases released by electric power generation across the U.S. each year.
- ECONOMY: Enabling alternative sources of energy like wind and solar can help stabilize and reduce the price of energy, helping consumers and businesses move towards consumption of clean electricity at a price cheaper than coal.
- JOBS: The renewable energy industry shows tremendous potential for job growth in the coming decades.

CONTACTS

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