

# Makani Power

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## Airborne Wind Turbine

• Generation



★ <b>Program:</b> OPEN 2009	* <b>Award:</b> \$5,584,267	📍 <b>Location:</b> Alameda, California	* <b>Status:</b> ALUMNI	📅 <b>Project Term:</b> 09/01/2010 - 10/16/2013	🌐 <b>Website:</b> <a href="http://www.makanipower.com">http://www.makanipower.com</a>
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### Critical Need:

Renewable energy is critical to our environmental, economic, and national security. Demand for energy is on the rise, as is our national reliance on fossil fuel-based power plants for the bulk of our electricity generation. There is a drastic need for safe, clean, and cost-effective alternatives to coal, such as wind, solar, hydroelectric, and geothermal power. These technologies would reduce carbon dioxide (CO<sub>2</sub>) emissions and help position the U.S. as a leader in the global renewable energy industry.

### Project Innovation + Advantages:

Makani Power is developing an Airborne Wind Turbine that eliminates 90% of the mass of a conventional wind turbine and accesses a stronger, more consistent wind at altitudes of near 1,000 feet. At these altitudes, 85% of the country can offer viable wind resources compared to only 15% accessible with current technology. Additionally, the Makani Power wing can be economically deployed in deep offshore waters, opening up a resource which is 4 times greater than the entire U.S. electrical generation capacity. Makani Power has demonstrated the core technology, including autonomous launch, land, and power generation with an 8 meter wingspan, 20 kW prototype. At commercial scale, Makani Power aims to develop a 600 kW, 28 meter wingspan product capable of delivering energy at an unsubsidized cost competitive with coal, the current benchmark for low-cost power.

### Potential Impact:

If successful, Makani Power's airborne turbines would provide clean power at a fraction of the cost of conventional wind turbines and enable the widespread use of renewable energy, resulting in significant reductions in CO<sub>2</sub> emissions.



#### Security:

Increased availability of renewable power would help diversify the U.S. energy portfolio, allowing homeowners and businesses access to a grid that is less dependent on any one source of power.



#### Environment:

Providing clean electricity would significantly reduce the greenhouse gas emissions associated with electricity generation. Presently, over 40% of U.S. CO<sub>2</sub> emissions come from electricity generation.



#### Economy:

Enabling alternative sources of energy like wind and solar can help stabilize and reduce the price of energy. This could result in significant cost savings over fossil fuels in the years to come.

## Contact

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## Partners

Makani Power, Inc.

## Related Projects

- [1366 Technologies - Cost-Effective Silicon Wafers for Solar Cells](#)
- [Agrivida - Engineering Enzymes in Energy Crops](#)
- [Algaeventure Systems \(AVS\) - Fuel from Algae](#)
- [Arizona State University \(ASU\) - Turning Bacteria into Fuel](#)
- [Arizona State University \(ASU\) - Metal-Air Electric Vehicle Battery](#)

Release Date:

10/26/2009